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See page 512 for announcement of Textile Directories

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The One Real Assurance

—A Message from the Editors of TEXTILE WORLD

TO every major industry, there comes at some stage in its development, a turning point—a crucial period. Usually this crisis develops directly from impairment of the balance between production and consumption—but indirectly its genesis may be traced to a variety of subtle changes developing over long years and defying accurate rating as to their relative importance.

The domestic textile industry has entered upon such a transition stage. It has experienced years of depression and instability in the past, but it is safe to say that never in its history have so many of its units faced such an actual and acute struggle for existence as has confronted textile mills in recent years.

It would be simple to gloss over the unfavorable factors of the moment and paint a glowing picture of the improvement which the majority are predicting for 1927. But the situation calls for plain talking. The simple fact remains that no revival of business this year can be anything but temporary unless there is a coincidental and vigorous movement to correct the basic ills of the industry.

In the anticipation of improvement for 1927 lies the greatest danger. An immediate expansion of business may have a deadening effect upon the newly aroused consciousness of the need for fundamental action.

It is true that congratulations are in order. No less a person than Secretary of Commerce Herbert Hoover tenders them to the industry in his message to readers of TEXTILE WORLD on the following page, when he refers to the innate virility which has made the new spirit of cooperation possible. Then again Walker D. Hines, in his message, points to a period in which the mutuality of interest between all factors will be recognized.

But the editors of TEXTILE WORLD, at this time, wish to subordinate congratulation to warning. They have no doubts as to the constructive expansion which the broad future holds for the textile industry—but they have a deep conviction that the realization of this expansion calls for the expenditure of unceasing effort, irrespective of fluctuating business conditions.

To such effort, the cotton industry already is committed. It is to be hoped that wool manufacturers will develop a similarly concrete program in 1927. It is to be urged that all divisions of the industry, whether cotton, wool, or silk, realize that successful and uninterrupted prosecution of such cooperative movements, along both economic and technical lines, is the real assurance for the future.

Easy times do not lie around the bend of the road. An increasingly keen struggle for supremacy is ahead, but if each year brings as much broad development as did 1926, there is occasion for nothing but the most positive optimism.

"Institute a Mark of Textile Initiative"

—Herbert Hoover

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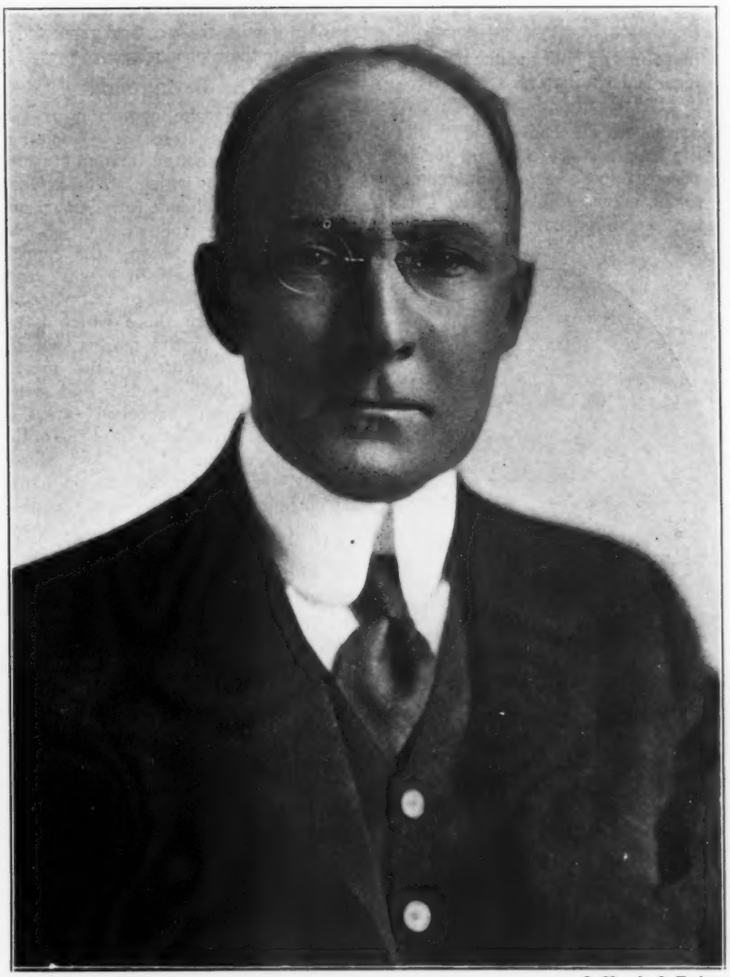
"THE textile industry has been suffering from many difficulties—hangovers from the war, changes in styles, shifts in location, and lack of cooperation within itself for the many purposes which can be undertaken in the interest both of the public and the industry.

"The organization during the past year of The Cotton-Textile Institute with a membership of three-quarters of the industry has great promise of fundamental assistance toward stability. An industry with so great a number of people dependent upon it, with so large a volume of capital and savings invested in it, cannot long remain in distress without great hardship in its own ranks and without infection to other industries.

"The fact that the industry has organized itself to exhaust every effort that scientific and economic investigation can indicate for the elimination of waste and irregularity to production is itself a mark of our industrial progress from the old notions of trade restraint as the basis of cure for economic ills and is also a mark of the initiative and courage within the industry."—*An exclusive message to readers of TEXTILE WORLD from Herbert Hoover, Secretary of Commerce.*

"Work of Institute Concerns All Factors"

—Walker D. Hines



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"IN becoming president of The Cotton-Textile Institute, I have assumed a highly important task that is replete with opportunities for service. I am impressed with the view, however, that it would be a disservice rather than a service for me in advance of careful investigation and mature reflection to proceed to outline specific policies. The only safe declaration of policies I could now give would be of such a general character as to be hardly more than a general expression of my good will, which I am encouraged to believe all branches of the cotton textile trade take for granted.

"I can, however, outline my method of approach to these matters by saying I am seeking, as I get the opportunity, to educate myself in my new work by the fullest possible discussion, not only with mill representatives but with representatives of the cotton growers and with representatives of every phase of the distributing trade. I am confident that in connection with all of these great interests I shall find that there are very important matters of common interest as between them and the mills. I want to ascertain and understand these matters of common interest and to aid in promoting their further development. To this end I shall welcome suggestions from every interested quarter."—*An exclusive message to readers of TEXTILE WORLD from Walker D. Hines, president of The Cotton-Textile Institute.*

Cotton—Copper

Interview with George A. Sloan, Secretary of The Cotton-Textile Institute, Inc.,—Outlines Scope of Copper Research and Forecasts Probable Activities of the Institute

NOW that the cotton manufacturing industry is definitely launched on a program of cooperative effort through the organization of The Cotton-Textile Institute, the interest of producers has been focused upon the history and accomplishments of similar undertakings in other industries. Probably no one of these movements is more worthy of attention than is the Copper & Brass Research Association, not only because the situation it had to meet was similar to that now faced by the cotton industry but because George A. Sloan, the secretary of The Cotton-Textile Institute, was secretary of the Copper & Brass Research Association almost from its inception until his appointment last fall by the cotton group.

For this reason, Mr. Sloan was asked by a representative of TEXTILE WORLD to point out methods and results of the copper movement which might have a bearing upon the field in which he is now interested.

Before approaching the details of this comparison, Mr. Sloan expressed himself regarding the function of cooperative movements in general. "Although the activities of the leading trade associations in this country vary somewhat," he stated, "they all have a common purpose, whether or not expressed in the by-laws or charter of the particular organization. This purpose is, through coordination of effort, to promote the knowledge and uses of the products of the particular industry with a view to increasing the profits of the subscribing members. Sometimes a more noble reason is outlined—and with honest intent—but nevertheless no prospective member of such an organization will join its ranks until he can be shown that his membership will stimulate in some way the sales, and consequently the profits, of his own business.

"The best industrial thought today recognizes the fact that profits are definitely linked with giving to the consumer the greatest value for his money. This insures mass consumption which is always the surest means of obtaining maximum profits with minimum costs.

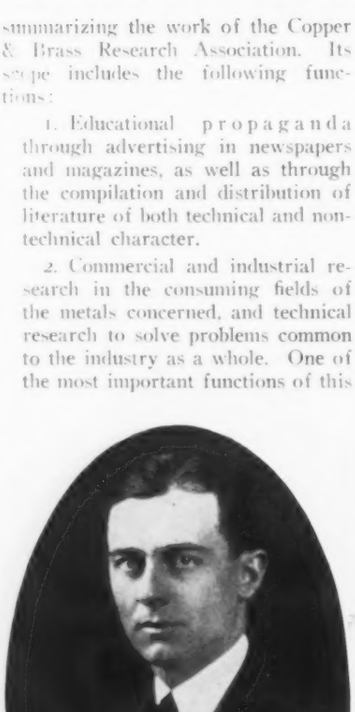
"The means employed to improve the status of an industry are not always the same but our Government, through the Department of Commerce, recognizes the fact that trade association activities, in the main, serve a useful economic purpose. Generally speaking, so long as these activities do not unfairly affect competitive conditions, they are proper and beneficial to the industry and public alike."

Scope of Copper Movement

Mr. Sloan then illustrated such beneficial associational activities by summarizing the work of the Copper & Brass Research Association. Its scope includes the following functions:

1. Educational propaganda through advertising in newspapers and magazines, as well as through the compilation and distribution of literature of both technical and non-technical character.

2. Commercial and industrial research in the consuming fields of the metals concerned, and technical research to solve problems common to the industry as a whole. One of the most important functions of this department has been the development of new uses for copper products.



George A. Sloan, Secretary, The Cotton-Textile Institute

3. Cooperation with dealers, trades and professions—including the architect, the plumber, and the sheet metal contractor—and with every one concerned with the distribution of, or workmanship in, the metals.

4. An information bureau, or central office, which in the case of the Copper & Brass Research Association assists the home owner and prospective builder in solving building problems.

Statistical Work

Mr. Sloan pointed ont that the above program of the copper industry does not include the collection or dissemination of trade statistics. This is not due to any lack of recognition of the importance of such a service. On the contrary, it is regarded as so necessary in the metal industries that an entirely separate organization is maintained for the purpose, namely, the American Bureau of Metal Statistics. Mr. Sloan stated that one of the vital departments of The Cotton-Textile Institute will be the compilation and publication of information on production and consumption which should enable member companies to more intelligently operate their mills in accordance with the existing general demand for their products.

The Background

Not only is the operation of the Copper & Brass Research Association of interest to cotton manufacturers, but the situation which led to its formation offers a chance for comparison.

"Immediately following the late war," stated Mr. Sloan, "the copper industry found itself in a most precarious situation based on unfavorable factors not unlike those which have influenced the textile market within recent years. With all the mines operating to full capacity and with many of them reopened at the Government's request to meet the military requirements of this and allied nations, there naturally was on hand a tremendous surplus when the armistice was signed. On top of this, many substitutes had taken the place of copper while it had been temporarily removed from commerce; consequently, and quite naturally, those interested in the promotion of those substitutes were reluctant to give up the markets acquired in a time of national stress. Copper was in exactly the same position as many of the better materials on which American business had been built—and the situation was somewhat analogous to that which faces the cotton manufacturing industry today.

"One of the first steps taken to prevent the industry from meeting disaster was the formation of the original Copper Export Association, which represented the bulk of American production in its sales of copper abroad. This was followed closely by the formation of the Copper & Brass Research Association in 1921, organized primarily to increase the domestic consumption of copper, brass and bronze. The principal mining companies of North and South America, the fabricators of New England, Pittsburgh and New York, and leading merchant distributors of the metal all over the United States were its early sponsors. In its comprehensiveness, this association is therefore similar to The Cotton-Textile Institute which invited into its membership the cotton mills of the country without regard to sectional lines and which hopes to enlist the cooperation of all factors from the growers of the raw material through to the distributors of the finished fabrics.

Details of Campaign

"For five years the Copper & Brass Research Association has been hammering away persistently at the consuming market. Through research, frequent talks before trade bodies, advertising, publicity, literature, and other activities, it has sent its message into every nook and corner of the United States, and the public has reacted splendidly as it always does when fairly treated. By that I mean that the association never advocates the use of copper and its alloys for any purpose save those which it knows, through scientific research and best accepted practice, are the best. The association has tried to keep its campaign on the very highest ethical plane, dealing neither in exaggeration nor misrepresentation, and its members feel that it has proven conclusively that a program carried out on these lines must succeed.

"It has made very few claims for copper, but the few it makes are mighty ones and are told with such frequency that they become indelibly stamped on the public mind. Most important of all, the association claims that copper will not rust, which in turn means that it has almost everlasting life, and that therein lies the economy of its use. Once put in use, it requires neither upkeep nor replacement. The lesson to be drawn from this is that, in the same manner, cotton has certain well defined advantages which have been lost sight of in the more recent development and exploitation of substitute materials. These advantages can be told to the consumer in a convincing way—without exaggeration.

Tell The Romance

"But there are other angles to the story which can be told. To revert back to copper, so far as historians have been able to ascertain, this was the oldest metal of commerce and was mined and used by man prior to the reign of Menes, the first Egyptian king, about 5500 B. C. At best we have only meager Egyptain records and brief references from the Scriptures. From its native state of reddish rock, copper was first made into fighting weapons, and we can easily imagine its use almost simultaneously as a metal of peace. Modern excavations have proved that copper was first melted prior to 3500 B. C.; thus in the early days of civilization we had metallurgy as a science.

"'But wherein', you will ask, 'does such historical development fit into a campaign to increase the consumption of the metal today?' The answer is simple: The history—the romance, if you please—of copper has been of first importance to the association in telling its story, in that it enabled it to get first the interest of its audience so that it could later explain the advantages of the metal. It is the romance of copper—just as it will be the romance of cotton—that has its

(*Continued on page* 312)

The Institute as Seen through Southern Eyes

A Report of Conversations With Cotton Manufacturers in That Section—Unanimous Interest and Almost-Unanimous Endorsement a Feature—Anxiety Lest It Become "Just One More Association"—Summary of Their Ideas of Principal Angles of Attack

By Douglas G. Woolf

There is nothing new in this article.

We feel it necessary to make this announcement at the start so that there may be no subsequent imputations of misrepresentation.

One might suppose that a wandering reporter who interviewed a considerable number of southern cotton manufacturers—which we did—might secure at least one brand new thought—which we didn't.

This is not a reflection upon the mill man; nor, we hope, is it one upon the reporter.

It only goes to show how much of an old chestnut this question "What's wrong with the textile industry?" has become. It has been discussed from every angle and by every type of discusser until it refuses to yield new ideas. When we got back home and expressed our surprise at not digging out some one revolutionary thought, our associates remarked: "The surprise would have come if you had developed one."

Then why run the article at all?

Because it is an attempt to set down, in the order of their importance, the jobs which southern mill men feel The Cotton-Textile Institute should tackle. When we say "order of importance," we mean the degree of emphasis attached to them by the men interviewed.

As such, we trust it is a contribution to the discussion—at least from a cataloging standpoint.

DESPITE the fact that the South, through its associational meeting at Atlanta last May, started the impulse which later became The Cotton-Textile Institute, there has been a suggestion in certain quarters that manufacturers of that section were not as sympathetic with the purposes and ideals of the organization as they might be. This thought could not have been based upon any lack of membership support from southern mills, because they have come through finely. It was probably built upon the assumption that a section enjoying all the widely-advertised advantages over the North, could not be willing to share equally in the expense of a movement which it does not need as badly as does New England.

Which, we feel convinced, is the most unwarranted hypothesis ever created.

The really big men of the South are not laboring under the delusion that their future path is strewn with roses and that "they should worry" about the thorns of Massachusetts. They recognize certain fundamental problems confronting the industry which must be corrected if cotton mills, whether in New Bedford or Greenville, S. C., are to be assured of sound progress.

And so we found, in the first place, a unanimous expression of interest in the plans of the Institute such as we have evoked with no other topic of discussion. We found, further, an almost unanimous endorsement of its existence and purposes. We say "almost" because we met a relatively few men—and good thinkers at that—who had been forced, reluctantly, to the conclusion that the new organization has not a chance in the world to achieve any constructive end.

Their objection was based very largely upon the belief that the industry is too widely scattered, both financially and geographically, to be consolidated into any forceful program. One man expressed it this way: "There are only two lines of attack open to the Institute. One is to fix prices and the other is to direct organized curtailment of production. The first is illegal and the second is impossible in our industry." Another man said: "It is not that there are too many mills but too many mill men—each with his own idea of what's wrong with the textile industry. It is hopeless to expect them to agree on any one program." And still another remarked: "Bankruptcy is the only hope for cotton manufacture—and that's a painfully slow process when you consider all the surpluses which must be dissipated first."

A Warning

But those thoughts represent very much of a minority opinion. The others, quite naturally, did not feel that the success of the Institute was assured by its formation, but believed that, under proper direction, it could achieve results such as no single development has ever brought to the industry.

Their only fear may be expressed in these few words: "Don't let it become just one more trade association. There is no room for another one. Those in existence are doing their job finely—and comprehensively. What we need is an organization functioning solely as an experimental laboratory where fundamental wrongs may be examined; and as a corrective agency through which they may be overcome."

Standard Cost Basis

So much for the negative side.

Positive opinions on the possibilities of the Institute formed the bulk of the conversations.

We made notes after each interview and then, when we got home, we tried to draw up a "preferential order" table—one which would reflect the degree of emphasis placed on individual points by the average man interviewed. It was a weighted average, we'll admit; that is, we gave more consideration to opinions of men who, in view of past experience, impressed us as manufacturers possessing a vision which reached beyond that of daily or monthly or yearly production.

And this was our first surprise: The best opinion in the South, as we encountered it, recognizes as the first need of the cotton industry a uniform basis of cost determination. Knowing as they do the excess of production over consumption which has developed cut-throat competition, these men feel nevertheless that most of the uneconomic prices made in recent years have been due to lack of knowledge rather than to intent. They believe that many, many mills have injected depressed quotations into the market because they were basing their estimates on faulty mathematics. They are confident that these prices have been figured on a percentage of machinery operation far at variance with actual practice.

This is not a new thought; it has been emphasized before. However, it is interesting to note that leaders in the industry recognize the need of a standard cost basis as one of the outstanding prerequisites for business sanity.

Consolidations Inevitable

The second dominant thought developed has a relation to one of the negative opinions referred to previously—namely, that there are too many mills and too many mill men. Many men interviewed did not regard this as an insurmountable obstacle to industrial cooperation but as a condition which will be righted in time. They feel that there are too many small, uneconomic units, and that consolidations, not only of similar types of plants, but of different stages of manufacture extending even into the apparel field, are inevitable. Some of the men interviewed were of the impression that this was a problem for the consideration of the Institute but they did not make clear just how they thought this organization could function in such a way. The writer confesses that he himself cannot visualize that as an active part of the Institute's work—although of course an indirect impetus might be given through publicity.

It should be noted that both of these outstanding thoughts might be construed as presuming an element of dictatorship in the Institute and its leader. However, all the sound thinkers are of the belief that coercion is neither practical nor desirable in American industry. In the case of standardized cost methods, for example, proponents made it clear that their plan had no bearing on "price fixing" nor on a compulsory reporting of cost methods—but rather that they hoped the Institute might develop some method by which it could make available to members sound advice on price determination. Similarly, in the case of consolidations, it is the belief of the writer that those favoring such a development look to the Institute for endorsement rather than for autocratic action.

Mental Flexibility

The third thought, in order of preference, also represents a type of service which calls for sympathetic publicity rather than for remedial measures.

Most of the men interviewed were outspoken in their belief that much of the depression in the cotton industry can be laid at the doors of the manufacturers themselves. They feel—and they include themselves in this criticism—that mental inflexibility has been responsible for many fundamental ills. They have no method to suggest by which the Institute can develop a group of broad minded, alert individuals. They feel, however, that the organization can preach the doctrine of adjustment to new conditions. They recognize in its avowed neglect of tariff and other political problems, a wholesome tendency in the right direction because they believe that manufacturers, *including themselves*, have been inclined to impose on tariff, labor laws and other outside conditions the blame which should properly rest upon themselves.

Incidentally, we encountered a real feeling that this situation is slowly adjusting itself. Men interviewed expressed the belief that the advent of technically trained young men into the ranks of executives is supplying a new type of managerial material. We would have a natural reticence about emphasizing this point if some of the "old-timers" themselves had not brought it up. Here is a characteristic comment: "I belong to the old

(*Continued on page 187*)

Textile Industry's Need of Basic Facts

Problem of Over-Production Can Be Solved Only by Better Adaptation of Production to Requirements—Profitable Distribution a Necessity for Underwear Manufacturers as Well as for All Other Branches of Industry

By Irving S. Paull

The author of this article was formerly head of the Bureau of Domestic Commerce of the Department of Foreign and Domestic Commerce at Washington. Since severing his connection with the Government, Mr. Paull has had some interesting contacts with industrial concerns and associations. He has been retained by the Associated Knit Underwear Manufacturers of America to supervise an economic survey of the country with a view of determining logical distributive areas. He has recently been associated with a similar survey for the foodstuffs industry. The apparent availability of such a service, scientifically developed and efficiently interpreted, to the textile industry makes the effort in behalf of the knit underwear trade one which will doubtless be watched with keen interest. Its use in a practical way may demonstrate the advisability of expansion to include all branches of textile manufacture.

Mr. Paull's pronouncements in the accompanying article should, therefore, be regarded as having a wider application than to the knit underwear manufacturer alone.

THE problem that confronts the textile industry today may be new to the present generation, but nearly one hundred years ago factory building and equipment had outstripped markets. As early as 1829 and again in 1834 and shortly before 1850 there were withdrawals from an over-manned textile industry.

Men who could not adapt themselves to rapidly changing conditions saw their enterprises fail and their hopes shattered, but the industry made progress, because it contained men who possessed the adaptability and genius to find opportunity where others found failure.

Concerns which entered the industry for the production of sailcloth were presently producing negro-cloth and later fine print cloths, which were of such excellence as to be sold as imported goods. So adaptable were these members of the industry that they perfected methods of producing damasks and other woven pattern textiles.

One hundred years ago there were men who could see no stability to the textile industry and looked upon the changing demands as a passing fancy of a fickle public. They were bewildered by the progress of their time and hoped for a return of outlived customs. Cotton importers and shipowners in the East India trade could see no economic justice in a situation that would terminate their profitable activities and some of them were never reconciled to the new order. However, there were others who withdrew from their former activities to engage in the domestic field and find fortune in the growing industry that had displaced them as importers.

It is not the purpose of this brief article to review the historical development of the textile industry from the time it became a factory operation, but we might do well to remember that the present situation is not entirely without precedent. Even the relocation of the industry is not new, for it is recorded that manufacturers in New England were looking to the South and to the West on every occasion that the field seemed to appear overcrowded.

Problems Affect All Branches

The term "Textile Industry" comprehends a great variety of important industries numbering more than fifty under census classification. Nevertheless, the basic problems confronting the entire industry do not vary greatly in their application to each subordinate industry. Each industry faces a situation of over-capacity and over-crowding with relation to existing markets.

Each industry in the textile field not only suffers from over-competition within itself, but faces increasing pressure from outside sources, either as to product, or materials. Not only do woven goods on occasion compete with knit goods, or vice versa, but we see fabrics introduced into women's shoes as a material and at the same moment we observe leather adapted to millinery and apparel.

Cellulose fiber becomes a material to compete with vegetable and animal fibers, not merely as an industrial material, but as an influence upon the consuming habits of the public. Fashion dictates short skirts for women and immediately the consumption of materials is reduced, but the exposure of shapely ankles calls for sheer silk stockings, but their beauty of line is marred by wrinkled underwear, or for some other reason best known to the feminine mind, and the market falls off for knit underwear, but silk bloomers, step-ins, etc., find ready demand for a period.

Research by Industry

When these changes of demand occur, they overtake established manufacturing concerns with startling suddenness and frequently carry catastrophe in their wake. Individual executives and the managements of industrial institutions are generally so fully occupied with the routine activities of business as to fail to observe trends which are vitally significant, though remote from their usual field of observation. Few concerns can afford the facilities of research by which such information is to be secured. However, the need of such information for the guidance of executives is not diminished by the difficulty of securing it. The fact that entire industries are affected and that the requirement of all of their members for the same information makes it apparent that research should be undertaken by industries, rather than by individual concerns and that the facts established by collective effort are the material for analysis and application by each member. The situation of an industry can never be much better than that of its least successful members. Therefore, it becomes the responsibility of an industry, for its own preservation, to establish the facts relating to its own economic position and to disseminate the information throughout its membership.

This discussion relates to a practical situation that will not adjust itself without effort on the part of industry. The fact that approximately 15% of the industrial concerns of the United States produce about 65% of the total value of annual output, does not exclude the textile industries. There may be variation from that average by specific industries, but there are relatively as many which fall below, as there are of those which rise above the average. Even the 15% of the number of concerns engaged in industry are not operating at full capacity when they produce 65% of the total value. It is within the realm of possibility, or even probability that if the members of this small group were able to sell to the capacity of their equipment they would find it possible to satisfy the entire requirements of existing markets.

Evolution of Underwear Industry

This situation can best be illustrated by confining discussion to a single industry which may be typical of a number of industries operating in the same general field. Previous reference has been made to the knit underwear industry as suffering from a radical change of style, but it is also affected by the more gradual changes of custom resulting from new conditions of living. With the introduction of more efficient heating facilities in homes, business establishments, and public buildings there became less necessity of dressing for protection against cold weather and there was a marked tendency to wear lighter underwear. Presently the doctors recommended dressing more lightly within doors in the winter and putting on heavier wraps for outdoor wear. The enclosed automobile and the better heating of public conveyances influenced people to change their accustomed habits of underdress.

About a quarter of a century ago there was a general adoption of union suits in place of two piece garments among indoor workers and gradually the change extended to include many of the outdoor workers as well. The change in type of garment created a degree of underwear consciousness that had not prevailed before. This was stimulated by a vast amount of advertising and the adoption of trade marked brands with exclusive features that carried an appeal for discriminating selection. Underwear became a subject of conversation among men and the merits of preferred brands were supported by their wearers.

The effect of national advertising was to place a variety of brands on the shelves of practically every retailer. Aggressive selling in support of advertising created large stocks in the hands of the retailers. This resulted in broken lines and large carryover from season to season. Retailers had not departmentized their accounting and were unable to determine definitely whether their underwear sales were profitable, or carried a degree of loss. Obviously there was overproduction, but it was largely absorbed into the stocks of wholesalers and retailers.

The increase of population and the more rapid increase of purchasing power during a period of ten years before the war tended to increase the consumption of advertised underwear from season to season and year to year and many concerns grew from relatively small institutions to major industrial plants. New concerns saw opportunity in the field and the industry grew in numbers as well as in volume. During this period a new type of underwear for men's summer wear was developed and the athletic type of woven garment came into competition with knit underwear. Supported by liberal advertising the

(*Continued on page 259*)

Fair Textile Year Lies Ahead

1927 May Not Be So Favorable for General Business as 1926—Cotton Textile Outlook Favorable and Should Hold Up Better Than Other Industries—Wool and Silk Industries Shade Less Well Positioned—Summary of Analyst's Record for Forecasting During 1926

By Dr. Lewis H. Haney

Director of New York University Business Research and Editor of TEXTILE WORLD *"Analyst"*

BEFORE taking a look ahead, we will look back over the last 12 months to see the nature of the foundation on which we must build for the year 1927.

Looking Back at 1926

(1) General Business Conditions

The year 1926 lay pretty nearly at the top, or toward the end, of the prosperity phase of a business cycle. In general the trend of business during the year was irregular and "sidewise," and toward the end signs of a decline were apparent. The year was not as good for the average business man as is often stated. The pessimist might call attention to a number of business indexes which showed a less favorable average than in 1925. For example, he might point out that the total value of crops was lower, and that wholesale trade, exports, sales of finished steel, and employment of factory labor all averaged under their 1925 levels, while both the number and the liabilities of business failures were larger (see Fig. 8). ***Certainly 1926 was a "spotty" business year in which the successful business man succeeded well, while others did poorly. Nevertheless it is roughly accurate to say that the total volume of commodities produced and shipped was about 5% larger than in 1925 and that, while commodity prices were lower, the efficiency of production was sufficiently increased to allow those who participated in that efficiency to make satisfactory profits.***

At the beginning of the year, overproduction was rather general, much as was the case in 1925. This appears in the index of production in basic industries, and also in silk and cotton textiles. In general, recessions set in about March or April and business continued irregular throughout the remainder of the year. In many branches of industry there was a fair-sized recovery in the fall, but in the last two months of the year a general declining trend was clearly in evidence. We see it notably in automobile production and in the steel industry. The employment of factory labor and the total payrolls of manufacturers were on the downgrade in the last two months.

In short, the year was a good one, with production in general above normal and the volume of trade so large that the producers who succeeded in getting a large share of the business were able to show increased profits; but conditions were highly irregular and a warning was given in the closing months of a rather general recession.

Compared with December, 1925, December, 1926, shows some gains and some losses. Employment in factories was 2.6% smaller and the output of steel ingots was 12% below that of the preceding December. The number of cars loaded with freight (see Fig. 9) was 1% larger and I estimate that December retail trade was between 2 and 3% greater in 1926 than in 1925. In November, wholesale sales were about the same as in the preceding year. The total production in basic industries in November was actually greater, but this gain was due to the abnormal output of coal and petroleum.

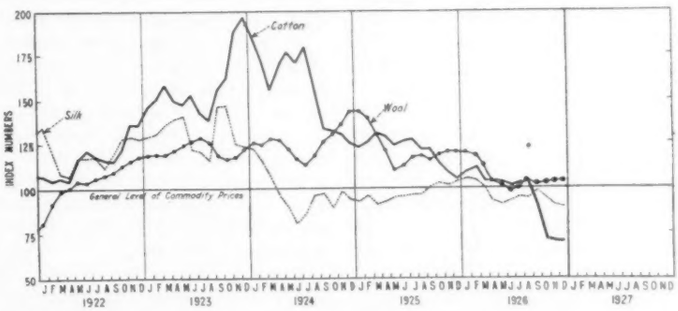

Cotton
Silk
Wool
General Level of Commodity Prices
INDEX NUMBERS
200
175
150
125
100
75
50
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1922
1923
1924
1925
1926
1927

Fig. 1. TEXTILE PRICE LEVELS—The chart shows how the chief textile fibers compare (1) with the general level of commodity prices and (2) with each other. The 100 line = average of all commodity prices, and fibers are normally priced when near the general level. The several fiber price curves are related to the general price level and so placed that normally they should be close together. For example, at the middle of 1924 cotton was too high, in comparison with both the general level and with other fibers.

The year just closed was notable in several respects and among the chief constructive developments was the large decline in the value of textile materials. Led by cotton, the chief fibres showed large declines during the year. One of the maladjustments in commodity prices during recent years has been the abnormally high price of these materials. It may be said that their return to a more normal relation with the general level of commodity prices is of great importance, not only to textile manufacturers, but to society in general.

Another notable development was the great efficiency shown in production and transportation which has enabled factories and railways to make reasonable earnings in spite of the decline in prices. By means of better organization, improved selling methods, and the adoption of labor-saving devices, the output per employe was increased, thus offsetting in part at least the high wages that prevailed.

Another point to be noted is the general return to a gold basis for currencies. While not completely established, such progress has been made throughout the world that no doubt now remains that the gold basis will soon be in general operation again and will result in greater stability in foreign exchange. At the same time, there has been a notable improvement in European industries, particularly in Germany. English industries were badly disrupted by the coal strike, but recovery there is only a matter of time. The first effects of European industrial improvement have been on the whole beneficial to this country and the ultimate effects will be beneficial to all. During the next year or two, however, there will be a transitional period during which the competition of European industries will doubtless react unfavorably on some of our own.

The downward readjustment in commodity price levels, which has been worldwide in extent, was one of the most marked features of the year (see Fig. 8). According to the Bureau of Labor Statistics, the average price of all commodities in December, 1926, was still 47.2% above prewar, but nearly 6% lower than in December, 1925. One of the outstanding declines occurred in clothing materials which fell about 10%. Cotton goods and silk were restored to pre-war levels, but woolen and worsted goods were still 89% above prewar and boots and shoes 84%.

Along with the decline in commodity prices, is to be taken the fact that interest rates failed to show any severe advance during the year in spite of the large extension of bank credit, both in commercial loans and loans secured by stocks and bonds (see Fig. 6). The greater certainty of the future, together with the large supply of capital, has probably established a lower normal basis for discounting the future, which is reflected in the fact that the yield on high grade bonds in December was only 4.55% against 4.7% a year ago, and 5.02% at the peak in 1923. This has tended to increase the value of fixed incomes payable in gold.

The strong points in the general situation at the end of the year are found in the sustained large volume of retail trade; the continued caution shown in hand-to-mouth buying and low mercantile inventories; the fairly close adjustment between production and trade in most industries, indicating that over-production does not exist to a serious extent; the strong financial position of all the leading industrial concerns; and, last but not least, the absence of monetary stringency. It is almost universally true that any severe business recession is preceded by strained credit and high interest rates. At present, however, all classes of money rates are moderate and the Federal Reserve ratio continues much above normal (see Fig. 6).

The Weak Spots

But certain dangers exist and it is the part of wisdom to consider them carefully. Outstanding is the low level to which farm prices have fallen. Unquestionably one of the weakest spots is found in the fact that the ***purchasing power of farmers*** in large sections of the country, such as the South and the northwestern spring wheat territory, has been seriously impaired. In much of the corn belt, too, the post-war readjustment is still incomplete and finds expression in bank failures and political discontent.

In touching on purchasing power, the recent ***decline in the employment*** of factory laborers and in manufacturers' payrolls must also be noted. In December, employment fell to the lowest point since June, 1925, and with the exception of that month, is the lowest since December, 1924. Payrolls in December were the lowest since September, 1925, making due allowance for seasonal conditions. The situation has not become serious yet, but in view of the large volume of installment sales, it may fairly be called threatening. In any case, it is conclusive evidence of the current recession in industry.

Of course the situation in the ***building and automobile industries*** will occur to everyone. The year ended with a little recovery in building activity, but the fact remains that there has been a general decline throughout 1926 and further decline is probable in 1927. The automobile industry has suffered one of the

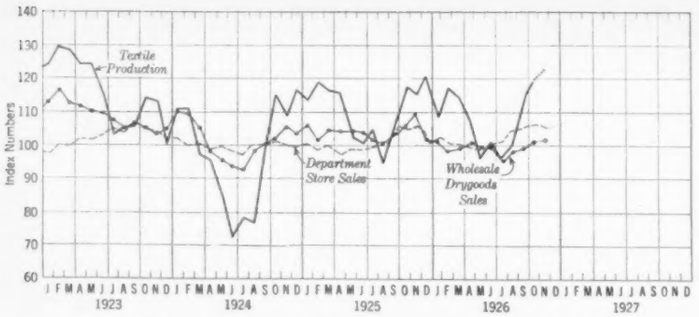


Fig. 2. GENERAL TEXTILE BAROMETER—Textile Production (Composite)—Prepared by Standard Statistics Co., 1921 = 100. Wholesale Dry Goods Sales—Adjusted for seasonal variation, three-month moving average centered on middle month; average 1921-4 = 100 (Federal Reserve Board). Department Store Sales—Adjusted for normal growth and for seasonal variation, three-month moving average. Computed trend last six years = 100 (Federal Reserve Board).

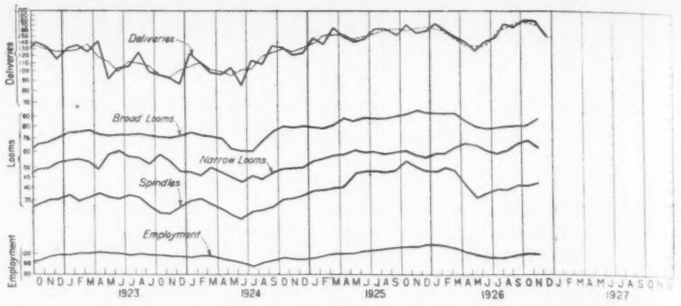


Fig. 3. INDEXES OF ACTIVITY IN SILK MANUFACTURING—Deliveries (heavy line). Bales, avg. 1921 = 100 (Silk Association). Monthly figures are shown. (dotted line), three months' moving average as above. Broad looms, narrow looms, spindles, per cent. active to total (Silk Association). Employment, number employed. Avg. 1923 = 100 (U. S. Bureau of Labor Statistics). All indexes in Fig. 3 are plotted on a logarithmic scale

sharpest slumps in years and in spite of the optimistic utterances of the manufacturers, it is practically certain that 1927 will not be as good a year as that which has just ended. Certainly competition will be extremely severe.

The progress made by European manufacturing industries, while it will help our exporters of raw materials, is bound to increase the ***competition*** experienced by manufacturers in this country who depend upon foreign markets to any considerable extent.

Finally, we note the continued ***sagging in commodity prices.*** Can our producers continue to meet this condition by further economies? Will the time not come before long when profit margins will be so narrow that curtailment will be required and the existing wage rates become impossible? No positive prediction is hazarded, but it seems probable that competition will be even more severe in 1927 than in 1926.

(2) The Textile Industry in 1926

With particular reference to the textile industry it may be said that 1926 was little if any better than 1925 in immediate results, but that the ***year was more constructive and furnishes hope for improvement in the future.*** The volume of production was not widely different from that in 1925. Cotton consumption by the mills increased about 4%, and cotton spindle activity about 1%. But wool consumption decreased 4%, and, while worsted spindles showed increased activity, there was a material decline in woolen spindles. Silk deliveries remained practically the same, while silk spindle activity decreased nearly 10%. Thus the year showed cotton gaining on the other textiles, as might be expected owing to the price situation.

Profits in the textile industry were on the whole unsatisfactory. The general decline in prices increased the difficulties of the manufacturers. I estimate that the average manufacturer of cotton cloth should have done about as well in 1926 as in 1925, (see Fig. 4) the average manufacturer of woolen and worsted cloth should have done better (see Fig. 5), and the average manufacturer of silk cloth doubtless made a poor showing.

As illustrated in the third chart, activity in the silk manufacturing industry in 1926 showed a gain in narrow looms and in deliveries to mills, but broad looms, spindles and employment in silk mills all averaged lower than in 1925, and there was an unusually sharp decline in deliveries in December.

The margins of cotton manufacturers fell to a very low point in 1926, reaching bottom in July. Then followed a little recovery and some further decline as the year ended. Margins were lower at the end of the year than at the beginning. On the other hand, the margin to be earned by converting a pound of wool into cloth improved appreciably between February and August, reaching a point at which fair profits might be made. Toward the end of the year, however, conditions for wool manufacturers became somewhat less favorable again.

Wholesale dry goods sales slumped during the middle months of the year and then recovered to about the same level as at the beginning. The situation is illustrated in the second chart in which the wholesale curve is adjusted to eliminate the merely seasonal changes. The dollar sales of New York cotton jobbers were smaller in 1926 than in 1925, but of course allowance must be made for lower prices, so that it is easily possible that the yardage sold was larger than in the preceding year. Wholesale silk sales, however, slumped decidedly in 1926, and, though there was some recovery in the fall, the year makes a rather poor showing.

The total sales of department stores in December were 3.8% greater than the same month of 1925 (see Fig. 2). There was little increase in volume between the two years, however, aside from the normal growth that is to be expected in any business. If allowance be made for such growth we find that there was a net gain in 1926 of only about 1½%.

The year 1926 was a poor one for the holders of cotton and wool manufacturers' securities. The stocks of southern cotton mills held up well, but worked a little lower during the year; while those of New England mills fell decidedly and ended the year near the low point (see Fig. 4). The wool manufacturers' common stocks fell to the bottom about the middle of the year and then showed a little irregular recovery. My index was 67 in January, 46.7 in June, and 49.8 in November (see Fig. 5).

The Outlook for 1927

(1) General Business

In general my forecast for 1927 is that it will not be as good a year as 1926 was. There are at present no signs of any acute setback nor anything to indicate that business will fall to depression levels. There is a possibility that favorable crop developments will pull business up toward the end. But as nearly as we can now see, ***the signs are moderately unfavorable and, with a little seasonal recovery in the spring, the general trend is likely to be downward at least until the middle of the year.***

For one thing, 1926 ended on a decline, while the two preceding years ended with a rise. It is notable that most of the basic industries, and notably the iron and steel industry, show a trend quite different from that at the conclusion of years in the ascending or prosperity phase of a business cycle.

Again, most of the sensitive "barometers" forecast a decline. This is particularly true of my P-V Line which has rather steadily declined during the past year and has now fallen well below normal.

A number of maladjustments exist which call for a remedy in the shape of some business recession. Farm prices, as already noted, are out of line. Manufacturers' inventories are on the average very large, while at the same time unfilled orders are extraordinarily low. Bank credit is not in as liquid a position as is desirable. It seems practically certain that the banks have too large a percentage of their assets in the shape of installment paper, real estate mortgages, and stocks and bonds, to be in a safe position. The ratio of loans and discounts to net demand deposits is rather high.

The chief supports of prosperity in recent years have weakened materially.

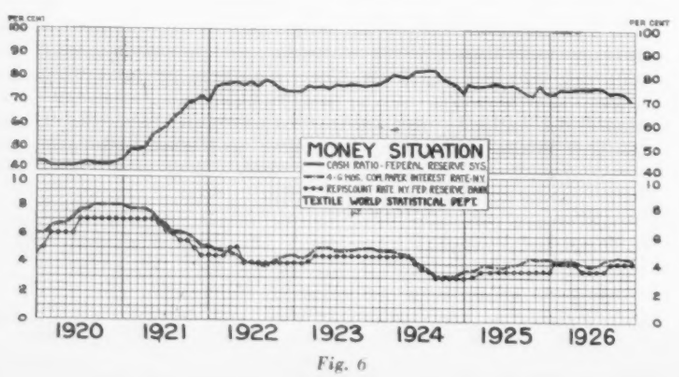


Fig. 6

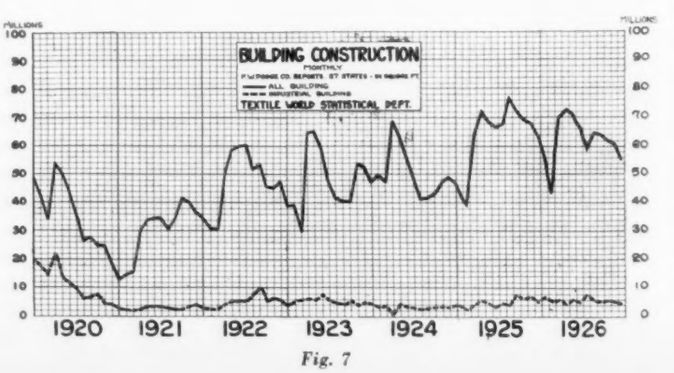


Fig. 7

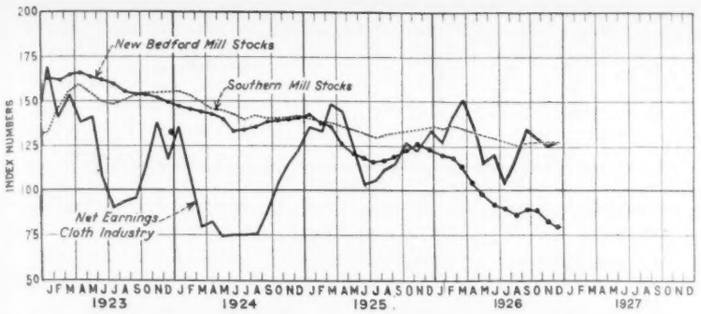


Fig. 4. COTTON MILL EARNINGS AND SECURITY PRICES—Net Earnings in Cotton Cloth Industry—Computed from the cost of raw material, labor, fuel, etc., the price of finished goods and the volume of production (New York University, Bureau of Business Research). New Bedford Mill Stocks—Average price 25 New Bedford Cotton Mill Stocks (New Bedford Standard). Southern Mill Stocks—Average price 25 Southern Cotton Mill Stocks (R. S. Dickson & Co.).

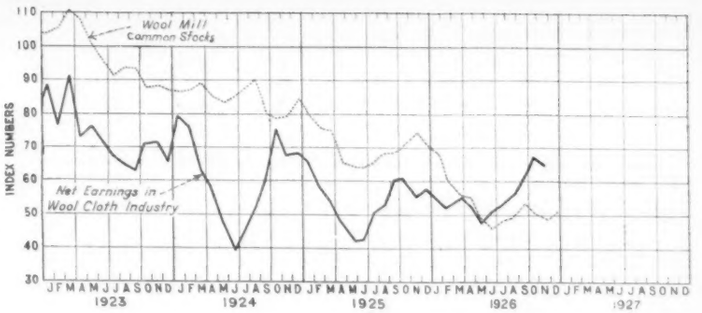


Fig. 5. WOOL MANUFACTURING EARNINGS AND WOOL MILL COMMON STOCKS—Net earnings in Wool Cloth Industry—Computation in the same manner as the earnings in cotton cloth industry in Fig. 4. Wool Mill Common Stocks—Average of American Woolen Co., Common and Arlington Mills Stocks.

Building activity has fallen to lower levels and the automobile industry has slumped. The general level of imports is high in comparison with exports and in general, competition from European manufacturers is increasing. The decline in employment and payrolls in the last two months is decidedly threatening, and as a result the income of consumers is probably too low in comparison with the hypothetical total value of industrial output figured at current prices.

As already stated, however, there was no reason to expect any broad liquidation or severe recession. Production has in general been in fairly good adjustment with the distribution of goods, and money is in abundant supply. Caution prevails, and under such conditions rarely, if ever, does a severe depression develop.

(2) The 1927 Textile Outlook

The outlook for the textile industry seems fairly good and particularly so in the case of cotton manufacturing. It is probable that the textile industry will hold up better than the average of other basic industries.

To begin with, the price of textile materials has fallen to a point where there should be a freer market for textile products. In the second place, there are clear signs that the textile industry is profiting by its recent years of trouble and is becoming better organized. The cotton and wool manufacturing industries at least appear to be on the way toward better knowledge of their statistics and their markets. Such developments should gradually get results.

The cotton industry starts the new year in a much stronger position. The price factor is particularly favorable. The raw material is abundant and cheap, while at the same time, stocks of the finished product are low. Of course, the recovery will be handicapped by any general recession in business, but the prospects are for a greater improvement in cotton than in the average industry.

The outlook for wool manufacturers is not quite so good as in the case of cotton. Unfortunately, raw wool and wool cloth are still relatively high in price. Moreover, the market for wool cloth is handicapped by the high labor costs of manufacturing clothing. If I am correct in my opinion that raw wool will work lower in price, however, the industry will show improvement later in the year.

The silk industry is still in process of liquidating the excesses of 1925 and in adjusting itself to a declining level of prices for its raw material. For these reasons business is not likely to be very satisfactory during the first half of the year, but at the present writing it seems probable that improvement will appear after that.

Price Trends and Their Significance

It will be noted that 1926 was the first year in a long while in which all textile materials declined in price (see Fig. 1). Cotton made the sharpest decline, falling about 39% between January and December. Silk came next with a decline of over 18%. Wool fell the least, being less than 18% lower in December than in January. The general decline in commodity prices was only about 6%.

Cotton reached its peak toward the end of 1923. The price was then far too high and as a result consumption was discouraged and production encouraged. Two large crops came in succession and now cotton has fallen so that it is the lowest of the three major textile materials.

Wool reached its peak a year later than cotton, at the end of 1924. It was then too high in price, with the result that consumption was discouraged and production encouraged. The world production of wool has come back to normal, while loom activity in this country has fallen to low levels. Wool is still the highest of the textiles and no large expansion in the industry is to be expected until the price situation is corrected.

Silk, after the slump in 1924, slowly gained in price until early 1926. In 1925 it was the cheapest of the raw materials, being below the usual relation to the general level of commodity prices as well as to the other textile materials. This encouraged a high level of consumption toward the end of 1925. But in the early part of last year silk prices went above the general level and nearly up to the level of cotton. At the end of 1926 they were much higher than cotton prices, judged by the normal relationship between the two. In a word, silk (as to price) has lost its place in the sun, and the recent troubles of the silk manufacturers are, in part, due to this fact.

This is the way that I interpret the accompanying price chart (Fig. 1) and I believe that textile manufacturers will do well to study the chart and observe that the relative price levels of their materials go far toward explaining the conditions in their respective industries.

Probably the most encouraging point concerning these industries is the fact that textile materials are now reasonable in their relation to the general level of commodity prices, even wool not being much above that level. This will help the sales of textiles although labor costs will continue to be a handicap. The outlook is for greater stability in the textile industries. Cotton prices are likely to be more stable than in any recent year. Wool is likely to settle gradually to somewhat lower levels, but no sharp break is in prospect. Much the same may be said of silk.

How "Analyst" Forecast 1926

Cotton Prices

Raw Cotton Prices: The Analyst held a consistently bearish position on raw cotton from February until October. Seventeen cent cotton, with 15c a later possibility, was forecast in August when spot cotton was near 19c, and when there was much talk of a further rise. More striking than the prediction of the drop, was the prediction in October, when cotton was 12.70c, that it was at the bottom and would recover to about 14c in the New York spot market. At the present writing spot cotton is 13.70c.

Cotton Yarn and Gray Goods: Lower yarn prices were predicted until July, when firmness was noted. Lower yarn prices have been forecast since early October. As in yarns, a bearish position towards gray goods was maintained down to July, and also after September. During the uncertain period of August and Sep-

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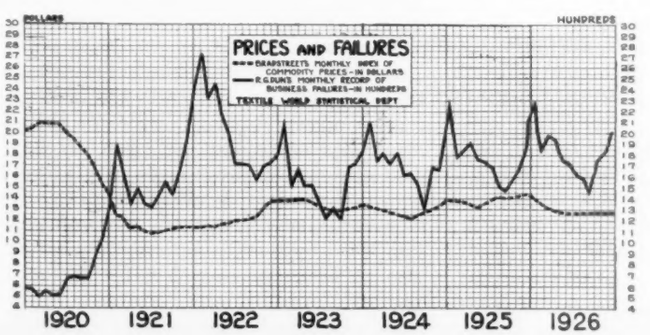

Fig. 8

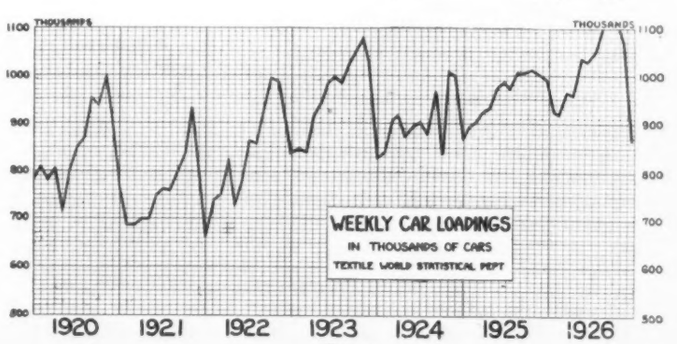

Fig. 9

Editors
Charles H. Clark Vernon E. Carroll
Clarence Hutton Douglas G. Woolf

EDITORIAL

We Believe
In the Conservation and Protection
of Domestic Industries

A Growing Industry

THE new mill construction carried out during 1926 showed a reduction from the average of recent years, but this was to be expected in view of the depression in many branches of the textile industry. Records compiled by TEXTILE WORLD show that the average number of new mills is normally about 250 per year. During 1926, there were 178 new mills established. Details of these projects will be found in the report of mill construction, published in this issue, together with details of numerous enlargements and improvements that were carried out at older plants.

So much emphasis has been placed on the depression in the textile industry that it will be a surprise to some to learn that new mill construction last year was carried on at only 30% reduction from the average rate for the last ten years. The explanation, of course, is found in the wide diversification of textile manufacturing. There are so many branches of the industry, supplying products for such a multitude of uses, that the demand for goods is bound to be heavy in some lines if people are to be clothed, houses furnished, or the activities in other manufacturing industries are to be carried on. For there is hardly an important industry that does not require textiles of some kind for its products or its operations.

Mills moving to more favorable locations account for an important part of the new mill construction, as would be expected, but it is easy to overestimate the proportion of the total which they represent. The greater part of the new construction has been for new mills, scattered from New England to the Pacific Coast, that are equipped to make lines in which there is no overproduction, and represent a normal growth of the textile industry. A more active period of construction is predicted for 1927, and undoubtedly the record for 1926 will be surpassed by a good margin.

* * *

Industry Needs No Curb-Bit

ALL great industries have, and must have, a potential productive capacity capable of filling maximum consuming demands. Most of our leading industries, as a result of the abnormal stimulus of World War and 1919-20 boom conditions, have a potential capacity far in excess of normal consuming demands, and the textile industry is one of these.

Potential industrial productive capacity is the product of these major factors: Equipment, labor and time. With all three factors in excess of normal requirements, an approximate balance between production and consumption is possible only during periods of abnormal demand, and inevitably is quickly followed by the other extreme. At all other times, because of the inhibitions of the Sherman and Clayton laws, and lack of cooperative control, a highly unbalanced condition must exist. The latter is the normal status of the textile industry, and particularly of its cotton section.

It requires only casual study of equipment, production, consumption and labor statistics to demonstrate that it is not excess machine equipment that is responsible for the high potential productive capacity of the cotton and wool industry, and their normally unbalanced condition, but that it is directly traceable to extreme flexibility in hours of operation of their equipment and a normally sufficient labor supply.

It is apparent that in the case of the cotton industry this flexibility is sectional and not general because of differences in State labor laws, and that in the case of the wool industry it is general because of the usual employment of male labor for both day and night work. The potential capacity of these industries is not a certain number of spindles and looms operated upon a single shift basis, but something approximating more closely to double that number of spindles and looms, because of possible double or triple shift operation.

From the resultant unbalanced condition of industry, the unnecessarily average high costs, and the capital and employment losses, the public suffers almost as much as do the stockholders and the employes of the mills, but the public has enacted the Sherman and the Clayton acts to perpetuate its losses, and as long as they insist upon this participation in the avoidable waste of industry just so long will it be difficult for industry to develop and apply other remedies—difficult, but not impossible.

The logical and permanent solution of the problem is to be found through cooperative action of industry under capable leadership and such control as would be possible if the Sherman and Clayton acts were amended along the lines of similar British legislation, thus allowing concerted curtailment of production, open-price associations and certain other cooperative action now "in restraint of trade." National labor laws of a class or sectional character, with their accompanying bureaucratic interference with industry, are not needed or desirable, and cannot solve the problem. Let Congress remove the curb-bit from industry and industry will solve its problems with equal benefit to the public and itself.

* * *

Relatively High-Priced Cotton

ACREAGE, weather and growing conditions, and prospective yield of the next cotton crop, with probable consumption and carry-over of the current crop, are factors that will exert greatest influence upon the trend of futures prices and attract greatest trade interest during the balance of this season, but for those manufacturers who require the longer staples and higher grades of good-character cotton the factors mentioned are of secondary importance to the available supply and prices of these particular selections, and their prices are relatively high and their supply appears to be relatively small.

There are two features of the status of the latter class of cottons that are deserving of emphasis: One is that their prices are relatively so much higher than those of futures and the short, low grade staples that buyers of combed and fine-count yarns and cloths must not expect to purchase on a basis of future prices; the other is that such relatively high prices are reasonably certain to encourage maintainance or increase of acreage of such cottons and a possible decline in premiums next season to a basis more nearly proportional to that of futures. There will be further encouragement for planters of premium and extra staple domestic cottons if the Egyptian Government's efforts to reduce acreage give promise of success.

* * *

Learning From Other Industries

A CRITICISM of the textile industry is that it has not paid enough attention to developments in other major industries. Progress in electricity, chemistry, power generation, merchandising, and general business policies are too often considered by textile executives to be interesting but of no immediate value. It is well to recognize that textile manufacturing is a combination of mechanical, electrical, chemical, and other branches of engineering, and that profitable mill operations depend to some extent upon making use of improvements in all these sciences as early as possible. In general business policies and merchandising methods there are common factors that affect all industries. A better appreciation of these facts is apparent, and events of the last year indicate that the textile industry has broadened its horizon to take in developments in other lines.

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Aids in Merchandising

REALIZATION that upon improvements in distribution and merchandising depends much of the solution of current problems in the textile trade is growing more and more general. That economic wastes are not confined to the manufacturing end of the industry is leading both producers and merchants to give increasing study to the details of marketing textile products. A steady evolution is going on in this important branch, though only occasionally do evidences of this development come to the surface.

Detailed and comprehensive knowledge of the basic facts and influences which are at the root of all merchandising practices are recognized as essential but only recently has any concerted move been made to extend this knowledge and to develop facts in relation to new merchandising methods. In both the cotton and wool manufacturing industries the ground work has been laid for the compilation and dissemination of statistics which will give the manufacturer and the merchant a

more accurate idea of the industry, of its trends, possibilities and pitfalls. With universal cooperation on the part of those whose interests it is designed to serve, these data should prove of ever-increasing economic value, especially if they are interpreted scientifically and understandingly.

In the distribution of merchandise much depends upon a proper understanding of the potential buying capacity of specific markets. Only with such detailed knowledge can the merchant decide whether he is utilizing properly his sales force, giving warranted attention to centers that can be expanded and eliminating waste energy on other centers that will not pay for the expense and effort spent.

It is a matter for congratulation that in one section of the industry an economic survey is proposed, with the idea of determining many of these elements and translating them into terms of service for the manufacturer and the seller. Such a survey is to be based on centers of population, sources of wealth and economical transportation facilities, which factors can be used to form boundaries for areas wherein merchandise can be profitably and efficiently distributed. With such area determined it would be possible to select the logical distributor or distributors in that section. This would tie up with certain recent developments in merchandising plans which have for their basis a better control of product, with the wholesaler acting in the role of a direct agent for the manufacturer or the selling house.

The reasonableness and efficiency of such a survey seem absolutely sound and its extension as an industry-wide undertaking, with the possible cooperation of the Government, would appear one of the most profitable things that could be undertaken.

* * *

Hope for Export Growth

THE only cause for satisfaction in connection with the export trade in textiles for the year 1926 is that the declines from the previous year have been comparatively insignificant. The record of statistics for the winter months, just available, shows the undoubted influence of a declining market practically throughout the year, upon foreign buyers. Lack of incentive to purchase in the export field has been just as potent as in the domestic market. The falling off indicated does not necessarily reflect decreased purchasing power in foreign countries nor should it be discouraging as an augury of the future.

It will be surprising if a marked change is not witnessed in textile exports for the current year. Not only does the low basis of cost make for increased demand for American textiles, especially cotton manufactures, but it provides a basis of more successful competition with foreign producers. Already the effect of this condition has been noted and prophecy of steady improvement seems entirely justified.

Of course, there are certain markets which may be regarded as permanently lost to American manufacturers, or at least they will be negligible factors as long as present internal economic conditions prevail. China forms a concrete illustration of this statement. In this and other countries the growth of native manufacturing is another feature which must progressively interfere with American exports. Development of the industry in many quarters of the globe is a matter for earnest consideration by those who cater particularly to export demand. This growth in certain quarters may mean the economic necessity of withdrawing from competition for specific markets as the ability of native manufacturers to supply local demand increases.

An increasing tendency to deal direct in the export trade instead of using the broker or the export house as a business medium has been a feature of importance during the year and is likely to be an increasing factor as time goes on. Establishment of a foothold and enhancement of reputations in individual markets mean detail and expense but both features will be minimized with experience and education, on the basis that this is the more economic, scientific and efficient method.

With the need of new outlets for cotton goods recognized as of prime importance in any program for the bettering of the industry, the cultivation of export trade forms a most conspicuous feature. Progress of the industry can be decidedly facilitated as the development of these business channels are expanded and made permanent.

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A Healthy Rayon Trend

FROM the standpoint of market interest, the 20% increase in domestic rayon production in 1926 was overshadowed by the double-barreled price reduction which jolted the trade out of its two-and-a-half year rut of stability.

It is unfortunately true that such upheavals cannot fail to have a temporarily unsettling influence on business, and consequently 1926 appears in retrospect to the producers as a difficult and trying period. However such a development was inevitable. The conversion, within six years, of a market situation where 9,000,000 lbs. were produced in a year, practically by one manufacturer, into one where over 62,000,000 lbs. were made by several strong firms, means naturally a radical change. Large scale production results in lower costs; and competition helps on the good work.

The November cut has brought prices to a level which does not permit of excessively large profits. Consequently, while there may be further reductions, it is not likely that they will be sharp ones—especially so far as the near future is concerned. Any drastic lowering of costs must now come from fundamental developments in manufacturing technique.

This leads up to a consideration of one of the most important phases of the rayon price situation. It is the fear of many that lessened profit margins will result in decreased expenditure for research—and will consequently retard advancement in the art.

On casual examination, such an argument may not appear unsound. However it does not take into consideration the impetus which competition necessarily imparts to research activities. The individual producers find themselves facing an increasingly keen struggle for supremacy—and participation in this struggle involves unceasing effort in the development of new and better types of synthetic fibers.

Furthermore, the industry is today composed mainly of large and substantial units. The half-baked rayon promotion schemes engendered by the fever of recent years have succumbed to the sting of profit-shrinkage. The gold mine days are over; and prospectors are moving on to stake out more promising claims elsewhere.

Those who remain have earned their right to existence and it should be possible to count upon their continued effort along research lines—not from any philanthropic or purely scientific impulse but because the new market condition demands it.

From every angle, the recent trend in the rayon market, while temporarily disconcerting, must be regarded as an entirely healthy one.

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Studying Plant Conditions

CUTTING costs is the manufacturing theme that has received most of the attention of textile mill executives during the last year. More investigations, searching and researching, into processes and management procedures is going on than ever before. As a result, there is less operating on the basis of personal opinion and more on the basis of facts obtained by study of internal plant conditions. This is one of the most important developments in manufacturing technique of the last year.

The work being done is simply a self-contained program on the part of individual mills to investigate and learn the facts about such variables as raw materials, machine organizations and settings, temperatures, atmospheric conditions, and personnel, in order to secure freedom from haphazard operating conditions and to reduce costs. Immediate returns are obtained in eliminating the carrying out of processes, or the operating of machines at something less than their best efficiency, in order to overcome defects that should have been eliminated at an earlier process. This insures smooth operation with more and better production, and a lessening of the problems of management. It makes possible the scrapping of past customs and standards, and uncovers improvements in organization and methods.

There is no need of going to any great expense in such a self-contained program of plant study. The work can be made to pay for itself as it goes along. One man working directly under the mill superintendent or agent can accomplish results out of all proportion to the expense involved, by studying the problems of each department, working out improvements on machinery or methods, and checking up individual machines and their products. The cost department and mechanical department are drawn upon freely for assistance, and builders of machinery gladly give their facilities for working out ideas and performing experiments.

This development is not organized pure science research, but it can easily prove to be the foundation of such cooperative effort when undertaken by The Cotton-Textile Institute or other organizations. In the meantime it is placing operations on a controlled basis and making possible the best use of materials, equipment, and working schedules.

International Wool Statistics in Sight

International Institute of Agriculture at Rome Willing to Assume Responsibility and Has Made Progress in Securing Cooperation of Governments and Trade Associations—Serious Difficulties to be Overcome—No Early Initiation Probable

By John Hubback

Honorary Technical Adviser to International Institute of Agriculture

World-wide recognition of the deplorable inadequateness of international statistics of wool production, stocks and consumption, and of the need of the world industry for such information, were emphasized as never before by the controversial articles on world wool stocks written by Sir Arthur Goldfinch and William Goldman and published by Textile World two years ago. Following their disclosures the editors suggested the desirability of the International Institute of Agriculture's undertaking the collection and dissemination of world statistics, which suggestion was heartily seconded by Sir Arthur and Mr. Goldman. The U. S. Department of Agriculture also urged the Institute to undertake the work.

Following approval of the Institute's General Assembly of Delegates last April an invitation was addressed to Governments and associations to cooperate in the collection of wool statistics and since then the Institute has made encouraging progress. That our readers might have definite knowledge of what are the Institute's plans the editors, through the courtesy of General Secretary Dragone of the Institute, are able to present the report of John Hubback, honorary technical adviser to the Institute and formerly a member of its active staff.

In forwarding Mr. Hubback's article General Secretary Dragone wrote as follows: "It is a matter of much satisfaction to know that your journal is working in aid of the Institute's efforts to carry through the enterprise of dealing adequately with wool statistics."

WITH its customary foresight and talent as regards public requirements, the United States Department of Agriculture has, for some time past, realized the advantages to be gained from accurate and complete wool statistics of production, stocks and consumption, for the important countries of the world.

Rather more than a year ago, the Department communicated on this subject with the International Institute of Agriculture in Rome suggesting that the Institute should give prominence to wool, among the products dealt with in its current publications, and should endeavor to obtain trustworthy statistics covering the whole ground of international trade in wool. It had, for some time, been considered at the Institute that such an enterprise was one that should be undertaken, and the Department's suggestion was cordially accepted.

Of Public and Trade Interest

It must be fairly obvious that it is for the benefit of the world at large to acquire accurate knowledge as to supply of any important article of industry; precision, when attainable, is really the keystone of satisfactory trading and accurate figures dealing with wool production, stocks and consumption should form the basis of sound economy, not only for the farmer and manufacturer, but also for the consumer. Inadequate data are liable to mislead those interested, but it may be that the consumer, in the long run, has to make good most of the waste of money caused by price fluctuations engendered in absence of correct information. It is, therefore, only needful to recall the fact of the absolute importance of such a staple article as wool, in order to see that the general public undoubtedly has a really serious interest in the question of accurate wool statistics, though the public interest may be accounted as less urgent than that of the grower and the manufacturer.

With the suggestion from Washington, the Institute took the field and laid the question in its entirety before those Governments which are most deeply interested in the wool production. From one and all the replies were favorable to the project; European manufacturers' associations when approached, also expressed themselves as generally in agreement, and some affirmed their willingness to cooperate.

Institute the Logical Collector

That the United States Department was right in consulting the International Institute of Agriculture may be emphasized by the fact that the Institute is in direct relations with 73 Governments, or practically all the world, and is thus in a unique position for collection of any statistics concerning agricultural products. It is true, that, for wool, the number of countries of primary importance, whether as producers or as industrial centers, is only a limited one, but when the statistical service is once organized in countries of the first rank, doubtless there will be subsidiary figures,capable of incorporation into the world wool statistics, obtainable from other Governments. For the moment, however, the efforts of the Institute are concentrated on the attainment of complete data from the principal countries. The subject of collection of these data was thoroughly discussed at the General Assembly of delegates from all countries, held at the Institute last April, with unanimous approval of an invitation to the Governments and wool associations to take steps for collection of the data of production, trade, stocks and consumption, which the Institute is to bring together, coordinate and publish.

Endorsement of Project

In October last, the International Wool Conference, held at Turin, pressed upon the various Associations the necessity of accurate statistics, particularly of those concerning stocks. At this Conference the International Institute of Agriculture was invited to send a representative, and due note of a Government proposal to constitute the Institute as the centre for assembling and distributing wool statistics was registered, for consideration by the proper authorities.

At the British Imperial Conference in London, during November last, wool statistics were the subject of a special report, insisting on the same necessity for uniform, trustworthy and comprehensive international statistics relating to production, stocks and consumption of wool. It was recommended that the necessary steps should be taken to ensure international agreement on this subject. It was also decided that the cooperation of all countries materially interested, either as producers or manufacturers, must be secured, since British undertakings would be placed at a disadvantage, if none but Imperial statistics were published.

Obstacles to be Overcome

With this pronouncement of the Governments of Great Britain and the Dominions interested, we approached the region of difficulties, apparently not insuperable, as regards carrying out the proposals so conclusively endorsed, primarily by these Governments, as represented at the Imperial Conference, secondarily by the International Wool Conference, of Turin, and lastly, by the General Assembly of Delegates at the Institute. These difficulties are, at the moment, two-fold: In the first place, the cooperation of the important wool producing and wool manufacturing countries has to be secured, as indicated by the British Imperial Conference. This co-operation is a matter of persuasion and the Institute, with its world-wide correspondence, possibly by a specially summoned conference, can be of material aid in effecting it; there is, however, no reason for expecting any refusal on the part of the Governments materially interested.

The second obstacle lies in the unwillingness, expressed at the Turin Conference, of a number of manufacturers to divulge their position as to stocks on hand, although the associations to which they belong were somewhat insistent on the necessity of obtaining the totals, including those of every manufacturer. This appears to be a matter that should be left to the associations, in the hope that they will adopt measures which would secure privacy for the data from any given establishment, leaving only the aggregate to be made known. If the area whence this aggregate is collected can be made sufficiently wide, objections on the part of individuals or groups might be neutralized.

No Individual Disclosure

It is quite natural that fears of publicity should weigh on business men, if the location of existing stocks of wool were in any way identifiable. The plan for collection, propounded by the field secretary of the American manufacturers, and calling for the use of key numbers and the tabulating machine in dealing with figures of stocks appears to provide for the requisite submergence of individual returns. The plan adopted by the United States Department of Commerce, whereby all cotton in consuming establishments is totalled in a single aggregate, might suffice for wool as regards stocks in manufacturers' hands. Each country would thus furnsh one total of these stocks.

Stocks in manufacturers' hands, however, do not by themselves give any accurate indication of the total quantity of wool available at a given date. They are, of course, a highly important item, but have to be taken in conjunction with figures of clips and of the outward movement from farms and other locations, preparatory to export, including also all quantities not yet delivered to manufacturers. The tabulation of all such data, together with those of exportation and manufacturers' stocks, all fall naturally within the scope of the International Institute of Agriculture.

The Institute's Advantages

It is well to emphasize the fact that the Institute appears to be the organism best adapted for development of the work of concentrating and coordinating wool statistics, not only on the technical side, already in operation for collection, elaboration and diffusion of statistical information, but also, and perhaps more

(Continued on page 259)

Progress on Wool Standardization

New International Grades for Wool and Tops Given Generally Favorable Reception—Misunderstandings as to Objective Largely Eliminated—Utilized Most Extensively by Growers and Spinners—Some of the More Important Uses to Which They May Be Put

By George T. Willingmyre

Specialist in Wool Marketing and Standardization, Bureau of Agricultural Economics, U. S. Dept. of Agriculture

Now that the new international standards for wool and tops are available and have been distributed widely, increasing interest is being shown by the trade in their possible and probable advantageous utilization.

Believing that the men most responsible for the development of these grades and the correlation of United States and British qualities and terms should be able to visualize the outlook most adequately, the editors asked George T. Willingmyre, who was the father of this movement and the representative of the Department of Agriculture, and Marland Hobbs, who collaborated with Mr. Willingmyre and represented the manufacturers' Joint Committee on Research and Standardization, to give the trade the benefit of their opinions, and to them we are indebted for the accompanying classifying articles.

MOST favorable results have attended the standardization of wool and top. The first step in improving methods and practices of marketing throughout the industry has been taken. At last the industry is provided with a definite and acceptable grade standard. Progressive members of the industry cognizant of the benefits to be derived, have turned eagerly to and are making practical use of the standardized wool and top grades. A genuine and sincere effort is being made by a majority of the manufacturers to regulate their qualities according to the official standards. There are very few now who are indifferent to wool standardization. This difference is not due to a stubborn resistance. It is mainly due to the fact that the purpose or object was misunderstood.

Improving Distribution Methods

In the establishment of wool and top grades we find in addition several important achievements. The standardization of wool and top grades has provided the bedrock upon which improved methods for distribution of raw wool and its products may be built. One of the important and probably the first to receive the attention of the entire industry is an organized effort to tabulate sales and sales prices for worsted yarns. This represents a very marked development, and with the genuine support and cooperation of the spinners it should accomplish much in the way of providing intelligent quotations and offerings according to standard grades and thereby provide an excellent basis for comparability. In this compilation of vital market news the need for a common language whereby the quality of wool or its products could be accurately determined and compared by those cooperating is again forcibly emphasized. In addition it has supplied a basis for more accurate price comparisons.

Adjusting Quality Disputes

Misunderstandings and annoyances are less likely to occur since grades have been clearly defined and standardized. A clear understanding of all conditions and factors which enter into the terms of a transaction tends to prevent disputes. If a dispute arises official standard grades provide a basis for a mutually satisfactory and speedy adjustment. It is the little differences of opinion, among the members of the trade with respect to qualities, so peculiar to wool men that make for some of our trade misunderstandings. Now these little differences can be adjudicated without embarrassment to either party by the principals involved.

There have been too many cases of cancellation in the past. Some of these were based on the complaint that the delivery was not up to quality, and probably it was not according to the buyer's ideas. If questionable deliveries can be checked and a means for settling these cases by arbitration or otherwise the number of cancellations for this reason will gradually diminish.

The means for determining quality have been prepared in the form of official standard sets containing the actual specimens of the wool and wool top grades, and may be obtained from the Department of Agriculture and used in a practical way in field, office or mill.

Words of dissatisfaction are constantly arising from the various quarters of the industry that conditions are not right. Something must be done to make the business more stable; the dull and busy periods with consequent rapid slumps and price advances must be prevented and the curves evened up; the manufacturing, distribution and price curve peaks must be leveled off so that the curve runs more smoothly. In other words what the trade really needs and must have to conduct a satisfactory business, is a price distribution and manufacturing curve that can be relied upon and which indicates evenness and gives confidence. Any information or means that will clarify the situation nad thereby increase confidence is to be desired.

Our whole method of distribution is wrong according to some members of the industry, but it must be remembered that this method has been developed to its present stage by force of necessity. If there is to be an improvement in the distribution practices the members of the industry are provided with a foundation in the official standards for wool and top with which to build the new structure or improve the present system.

Advantages of Futures Market

A futures market for wool and its products has often been considered, but it has been laughed to scorn and is usually the subject of ridicule by those who are contented with the present system of distribution. Those who are forced to take orders for partly or finished materials for delivery months to come consider that they would benefit from a system which provides for purchasing raw

The Author in Wool Laboratory of U. S. Department of Agriculture

Wool Laboratory, U. S. Department of Agriculture, D. W. Willingmyre Making Up Wool and Top Standards

material for deferred delivery and thereby covering on orders booked. By such a system growers, dealers and manufacturers may sell or buy at any time throughout the year for delivery extending over a period of weeks or months.

Growers very often are forced to dispose of their clip at what they consider an inopportune time. A future trading exchange properly managed and provided with facilities to store and finance would allow growers to indicate when the wool should be sold for delivery.

It is the opinion of some that a future trading market provides an opportunity for speculation and perhaps it does. However, this can be controlled if the transactions are subject to strict rules which prevent the transfer of options and buys. When future sales for future delivery are made either of wool, top or yarn the delivery and acceptance of the goods thus purchased should be made compulsory.

While the wool industry in the United States is adjusting conditions and practices to standards, considerable attention is being given to the principles of wool standardization in other leading wool producing and consuming countries.

Foreign Organizations Interested

Sets of the wool and wool top standards are now in the possession of the leading wool organizations in England, Germany, France, Italy, South America and other countries. They are providing those countries with a basis for a correlation of nationally known grades with the official standards of the United States. In a recent foreign publication there are to be found quotations on top with the national terminology and the numerical classification correlated. Since more than 85% of the imports entering into international trade are taken by five countries and 85% of the exports entering into international trade originate in five countries, it does not seem a difficult task to secure a uniform opinion with regard to grade description. It is probable this unity of opinion with regard to wool grades will develop in due time.

International Wool Statistics

One of the outstanding features receiving the attention of the wool world and on which all eyes seemed to be focused is the question of international wool statistics of stocks and consumption. For these figures to be of the greatest commercial value, the reports must be made and issued on definite grades. The numerical grades which are officially recognized in this country and used generally by the British trade provide a classification or grade for every kind of wool produced in the five important countries referred to, and likewise this classification will serve for wools used in or imported into these five important countries with a possible addition of a classification for carpet wool.

Other Important Uses of Standards

Meanwhile the work of educating our wool producers in the use of official grades is going rapidly forward. Great progress has been made by our wool producers in many ways during recent years. One of the most notable is the attention that is being given to quality of wool produced.

It was quite common some years ago to receive numerous communications asking for the price of wool. Inquiries of this sort are seldom received now. Inquiries received are for the price of a particular grade of wool which indicates without a doubt that producers realize the importance of gaining knowledge of wool as to quality, and have learned that wools of various qualities do not always have corresponding values.

In most of the agricultural colleges and universities throughout the country the official wool standards are used as a basis for teaching the subject of wool to the students. In addition the sets of the practical forms of the official wool standards are used at the State and County Fairs throughout the country. Demonstrations are given in grading. Wool grading schools are conducted for the purpose of acquainting the professors and teachers in the agricultural universities as to the standard grade and the proper use of the set of official standards. These workers in turn hold grading schools throughout their respective states and thereby disseminate the information and knowledge gained among the producers. County agricultural agents have rendered a valuable service in this connection and this important work will be continued in the more important wool producing counties of the country.

Sets of Standards Now Available

One of the chief difficulties in the work has been to prepare sets for distribution rapidly enough to keep pace with the orders received. The work of preparing the sets is being expedited and orders will be filled for sets of the wool and wool top standards as promptly as possible. Communications requesting information concerning the standards are always welcome and we will gladly furnish to all who desire a copy of the announcement containing the declaration of the Secretary of Agriculture establishing the standards, a brief historical sketch of the promulgation of the standards and the letters of approval of the work and standards from the leading wool manufacturing associations and the Bradford Chamber of Commerce.

I wish to pay a tribute for the most valuable aid rendered in connection with the establishment of these standards by Mr. Marland C. Hobbs and Mr. Warren E. Emley who were my co-workers and also members of the wool standardization committee which conferred and reached an agreement with the English authorities on these standards.

The New Wool and Top Standards

Their Chief Value Is in Providing a Basis of Comparison and an Intelligible Terminology

*By Marland Hobbs**

ON June 18 last the United States Department of Agriculture adopted or promulgated new standard grades for wool and tops. What is the reason for new standards; what is the basis of these standards and what are their advantages and possibilities?

Perhaps the best way to take up these points is to consider the disadvantages of the previous standards, which were based, as is known, according to the old American terminology of fine, ½ blood, ⅜, etc. The manufacturers, while heartily in accord with standardization (considering it not only practicable but a necessity) felt, however, that gradations by the American terminology were too narrow to be satisfactory for industrial purposes. It is a matter of only seven grades and between these grades there is a possibility of many sub-divisions.

There is a great difference between standardization of wool and other farm products, such as fruit, in the respect that the latter have no necessity for standardization after they pass the first stage of conversion, but the necessity for standardization of wool is needed for tops, yarns, cloth and for some garments. Wool must be sorted according to the articles into which it is to be manufactured and it would be impossible to restrict manufacturing practice of those grades for which the American terminology is used. Therefore, this system of gradation, which did not meet the requirements of all departments of activity in which it must enter, could not obtain any sanction of authority.

International Correlation Essential

Furthermore, the larger part of the wool used in this country is imported at the present time and no system of standards can disregard the 60 per cent of the total consumption which is not grown in America, and which does not need, nor come under, the American terms of commercial designation. The very foundation of standardization must take account of existing conditions in other than the American market. Such terms as "½ blood," "⅜" are utterly unknown in the wool trade outside of the United States.

To meet these requirements, the manufacturers pointed out to the U. S. Department of Agriculture that it was only necessary to refer to the experience of Great Britain (that country in whose dominion very much the larger part of all the wool for clothing in the world is grown) to find a system which grades wool by numbers, beginning nominally with 80s and going down to 36s. This system is sufficiently narrow, one which has something in keeping with the other wool growing countries of the world and one that is in common use in industry today.

The Result of Correlation

Unfortunately, there was no standard in Great Britain. Under the authority of the U. S. Department of Agriculture, a committee consisting of

*Member Joint Committee on Research and Standardization of National Association of Wool Manufacturers, American Association of Woolen and Worsted Manufacturers and National Association of Woolen and Worsted Spinners.

Official Wool Standards of the United States

Official Wool Top Standards of the United States

one representative from the Department of Agriculture, one from the Department of Commerce, and one representing the manufacturers of the United States, was sent to Bradford, England, where it succeeded in calling together representatives of the different Federations comprising all branches of the British industry. These British representatives prepared samples of wool and top showing the average Bradford grades from 80s down to 36s, a matter of twelve grades. After these samples had been approved by each of the Federations, samples of each were given to the U. S. Department of Agriculture. These samples are the basis of the new standards. There are twelve grades—i. e.: 80s, 70s, 64s, 60s, 58s, 56s, 50s, 48s, 46s, 44s, 40s and 36s. In the opinion of the manufacturers this movement is a marked step forward in the standardization of wool. These standards, based as they are on terms in general use in the wool trade of the world, should be satisfactory not only for the United States but for all countries and open a possibility for International Standards.

A Basis of Understanding

Standardization has become a necessity in many lines of industry and has proved of great value. For standardization of wool there is also a necessity. Up to the present time the same grades of wool, whether numerical or according to the American terminology, have varied between different countries, between different concerns in the same country, and have even varied in the same concern according to the supply and demand for a certain grade. As a result, when talking of grades, it has only been possible after considerable backing and filling to know just what grade is in question. Standards give something definite to refer to; 60s will remain 60s; and a common language with reference to wool will begin.

Clarify Reports and Statistics

Market reports and quotations in the past have been of little value; in fact, they have been misleading and consequently harmful. We have all read that ½-blood wools, tops, etc. are selling at such and such a price. To be sure a certain ½-blood is selling at that price, but whose half-blood? Is it the half-blood we have in mind? That we do not know and the report is discarded. What statistics we have had have been of some value, but they have been so broad (such classifications as merino, fine crossbred) that we have been unable to obtain their true value. Today we have definite grades sufficiently narrow in classification upon which such reports can be based.

The new standards consider diameter of fiber only. Gradation by length of staple and other qualities must also be standardized, but the new standards as they are cannot but help bring benefit and value to the whole industry.

The Chinese Textile Situation

Mills Suffered Effect of Civil War—Knitting Industry Is in the Best Shape

By Sih-Zung Yang

DURING 1926 Chinese textile industries suffered from the effects of civil war. The cotton mills managed to carry on, but it was difficult for them to secure raw materials on account of the interruption of the railways. The military parties monopolized all transportation facilities; railways, steamships, junks and mule carts.

Most of the cotton mills are located in big cities like Shanghai and Tientsin. Cotton is grown in practically every province north of the Yangtze River. In normal times, there is no difficulty in moving the cotton crop from the farms to the cities where a part of it is exported and the other part used by the mills. A normal crop of 2,000,000 bales (500 lbs., per bale) would be sufficient for home consumption. Whatever cotton is exported must be made up by a corresponding quantity of imports from India or the United States. Since it has been almost impossible for the cotton mills to rely on the home crop, more Indian cotton had to be imported during 1926.

In general, it has been a bad year for cotton mills, but a few located in the interior and therefore favorably placed with regard to raw materials as well as yarn markets, have reported satisfactory profits in spite of the unsettled conditions. These plants are located in Nantungchow, Mukden and Shikiachwang. It is interesting to note that these very mills are equipped with the latest American machinery, Whitin, Saco-Lowell and Fales & Jenks. Others similarly located but having antiquated equipment, failed to receive the benefit of the situation.

Weaving Not Balanced

The proportion of looms to the total spindleage in the country is still very low, but there is a tendency for the farmer to give up hand weaving for other industrial pursuits. This makes it more difficult for the yarn mills to market their products. It is very likely that as soon as conditions are more settled the immediate development for the Chinese cotton manufacturing industry will be an increase in weaving machinery without a corresponding increase in spinning equipment. At the present time this development has been held back on account of the timidity of capital due to unsettled conditions. According to the latest returns, there are 131 cotton mills in China, with a total spindleage of 3,500,000.

Knitting Industry

The knitting industry has not suffered to any great extent during the last two or three years since civil wars became popular. It is true that merchants find it more difficult to ship their goods to the outport retailers, and in some instances they refuse to ship at all when the risk of losing the goods is too great; but whatever business they lose is generally made up by increased demand from other parts of the country. For instance, the underwear and hosiery mills in Shanghai have been able to sell more and more of their products each year, because every year a certain section of China's vast population is converted from believers in woven underwear to enthusiastic wearers of knitted garments. Out of every ten Chinese citizens, perhaps only one is wearing knitted hosiery, six have been wearing socks made of woven cloth and the other three go bare-footed. Every year, a fraction of the six try a knitted sock and there they will remain. Therefore, the future is very bright for that industry.

Woolen manufacturing is beginning to receive the attention of some sections of the textile fraternity. There are about 25 sets of woolen cards and mules in China at the close of 1926, but there is not a single worsted spindle. We will surely see some developments in woolen manufacturing in the next two or three years.

Worst of Depression Behind Us

By Stuart W. Cramer

President, Cramerton (N. C.) Mills, Inc.; and Vice-President, The Cotton-Textile Institute.

I think the effect of the organization of The Cotton-Textile Institute is already being felt both directly and indirectly; mill men have been brought together and closer relationships already exist between them and the distributors of their products, right through to the retailers.

I do not look for a year of big expansion in the textile industry, but I do see signs of an improvement in the business.

With everybody concerned pulling together and fully alive to the needs of the situation, the worst of the depression and disorganization of the cotton textile industry seems to be behind us.

I repeat again, the outlook is very hopeful.

Indications Point to Improved Business

By G. T. Thompson

Treasurer, Berkshire Cotton Mfg. Co., Adams, Mass.

Indications since the first of the year point to a very much improved business, the duration of which it is impossible of course to predict but many conditions being much more favorable than at this same time in previous years, it would seem that the present pick-up in demand would carry on longer. We think very likely the trend of values will be somewhat upward in the primary market in keeping with advance which has taken place to date and which will probably continue a little while in cotton. We feel that the buyers will take advantage of this opportunity to increase their stocks and will follow the market upwards to a reasonable extent.

Statistics for Woolen and Worsted Industry

Need of Information First Requisite Because of Impaired Health—Belief That Wool Manufacture Overproduces in Same Proportion as Other Industries—Necessary to Have Reports from 40% of Loomage, 30% of Which Have Already Agreed to Furnish Figures

By A. D. Whiteside

President, National Credit Office, New York

LAST Sunday our family physician told me of the number of business men in their early forties whom he found in a seriously rundown condition, both mentally and physically.

When called in consultation in cases of this kind, he said his greatest difficulty was in convincing these men that before anything could intelligently be done for them, they would have to undergo a rigid physical examination.

These business men invariably seemed to think that the doctor would prescribe a tonic or, at the worst, a two weeks' rest.

They could not seem to realize, when it was found that their condition was the result of a long period of over mental exertion, that it would first take time to check the decline and then perhaps a change for several weeks to regain their normal vigor.

Industry Not in Good Shape

Later in the afternoon, these comments struck me very forcefully as precisely reflecting the situation in the woolen and worsted industry as it is today.

The industry is not in good shape.

It is logical to believe that in the circumstances, the Industry should undergo a rigid physical examination.

This is the first essential as, at the present time, no one knows with any reasonable degree of accuracy the exact scope of the industry. It is generally conceded, and it appears to be a fact, that the looms set up in the mills are able to produce more cloth than is required for current consumption.

While this appears to be the primary cause for the general lack of profits throughout this industry, the fact remains that every other major industry in the United States is in almost the same identical situation, for the current requirements for their materials are not in excess of approximately 75% of their producing capacity.

All other industries excepting the textile have taken a physical survey of their producing facilities and, with these facts as a basis for planning, have worked out a solution for their difficulties.

So it is hardly possible to expect the woolen and worsted industry to work into a permanently improved condition without first ascertaining the basic facts regarding its present set-up.

Assume for a moment that all of the mills would act on any suggestions that might be made for their betterment—how could constructive suggestions be made? What actual facts are available on which to recommend lowering production or increasing selling prices, or any other practical remedy?

No one knows the exact production of the mills at present, nor is it possible to more than surmise what their total producing capacity is; no one can tell that there is overproduction in one kind of cloth or another, or whether all materials are supplied in excess of the demand or only particular lines.

Every one closely identified with this industry believes that some action should be taken immediately to improve conditions.

Basic Survey Imperative

It is almost elementary to reiterate that no constructive action or plan can possibly be formulated without first obtaining a complete basic survey of the industry itself.

This survey would disclose the actual producing capacity in all materials of all the looms in the woolen and worsted industry.

This is not a complicated procedure, for the Industry is far more compact than is generally thought.

The following figures convey a fair idea of the number and loomage of the weaving mills in the woolen and worsted industry, grouped according to number of looms:

Mills with looms	Number of mills	Total looms
Over 1000	11	29,601
500 to 1000	8	5,972
250 to 500	25	8,342
100 to 250	115	16,137
50 to 100	139	9,428
Under 50	124	4,260
Total	422	73,740

Note—these figures eliminate the looms running only on blankets.

The following figures show the 1925 requirements of the four major groups purchasing woolen and worsted piece goods:

Cutters and Jobbers of—	No. of Cutters & Jobbers	Woolens & Wrstds purchased
Menswear	2040	$379,462,800
Small Menswear	471	13,188,000
Womenswear	1106	142,988,300
Small Womenswear	496	12,152,000
Costumes	1585	51,172,400
Small Costumes	522	4,384,800
		$603,348,300
Other Users	....	53,959,565
Total	6220	$657,307,865

History of Statistics

The present situation in regard to obtaining statistics in the woolen and worsted industry may be told very briefly.

During the Fall of 1926, Mr. H. E. Peabody, Field Secretary of the American Association of Woolen & Worsted Manufacturers, arranged geographical group meetings for the executives of the mills in ten sections of the country from Maine to Chicago.

Approximately 200 mills were represented at these meetings when statistics were discussed in detail and plans made for the mills to file at one central point, three sets of facts:

1. Manufactured Piece Goods Stocks on hand January 1st and July 1st.
2. Monthly Production.
3. Monthly Billings.

Approximately 50% of the mills in the entire industry have agreed to furnish this data. These mills represent about 30% of the total number of looms.

Forty Per Cent Needed

It is necessary, to carry out the plan successfully, to obtain the co-operation of at least 40% of the loomage of the country.

On December 30, a preliminary questionnaire was sent to the entire industry requesting the mills to furnish the following information:

1. Fabrics manufactured.
2. Whether woolen, worsted or mixture.
3. Price range of each different fabric.
4. Principal trades buying each group of fabrics.
5. Number of looms available for operation.

Twenty-five per cent of the mills replied by return mail to this questionnaire.

The first follow-up is now being mailed.

There is every indication that the majority of mills and 50% of the loomage of the country will participate in the complete statistical plan which will be put into actual operation on April 1 of this year.

The mills which have been directly consulted on the subject have definitely endorsed the plan and immediate steps are now being taken to secure the co-operation of the mills not already interviewed.

In summing it all up, the pertinent question is not so much—

What benefit may be derived from vital statistics?

As—

What can possibly be accomplished toward the permanent betterment of conditions in the woolen and worsted industry without statistics?

Is it to be a question of ruthless, destructive competition or intelligent, constructive co-operation?

QUESTIONNAIRE FROM NATIONAL CREDIT OFFICE

This is a preliminary form to be used as a basis for properly classifying the mills manufacturing woolen, worsted and cotton mixture piece goods, according to products and the number of looms available for operation.

This information will not be divulged to anyone under any circumstances. The writer will assume personal responsibility in coding the incoming information from which forms will be prepared for the regular monthly statistics.

**1 Fabrics Manufactured*	**2 (W) Woolen, Worsted or Mixture* (Wn) (Wd) (M) *	**3 Price Range Low From- $*	**3 Price Range High To- $*	**4 Principal Trades Buying each Group of Fabrics*

*Note: *1. Use the customary Trade name, as serge, bolivia, fancies, etc.*

**2. Check (√) in column whether Woolen, Worsted or Mixtures.*

**3. The price range is the low and high price charged for each class of fabrics.*

**4. Trades selling might be Men's Clothing, Women's Coats, Costumes, etc.*

Number of Looms available for operation—

Broad——— Automatic Broad——— Narrow——— Total———

Kindly give the name of the individual in your organization to whom all Statistical communications are to be personally addressed until a change is authorized. Separate sheets will be supplied for Branch Mills if you prefer to furnish the information in that way.

Name

Mill ..... *Address* .....

Individual ....

Note: If you are not manufacturing Piece Goods, kindly sign and return this sheet marked "Not Manufacturing Piece Goods."

Date .....

English Spinners and the New Cotton Crop

Spinners Futile Tactics in the Face of a Promising Situation—No More Enthusiastic Support of Keynes Cartel Scheme Than There was for the Macara Control Plan—Prefers Price Stability of Cotton to Low Prices—While Generally Optimistic Is Not Blind to Probable Difficulties

By Sir Charles W. Macara, Bart.

Sir Charles W. Macara, Bart., founder and for many years president of the International Federation of Master Cotton Spinners' and Manufacturers' Associations has been a frequent and valued contributor to TEXTILE WORLD and his keen opinions and analysis of world cotton and manufacturing conditions have been of the greatest value to the industry.

Because of his advanced years (he recently celebrated his 82nd birthday) the editors were somewhat hesitant this year about asking Sir Charles for his opinion as to the business outlook for English spinners, but in his prompt granting of our request and in the keenness and clarity of his observations in the accompanying article there is not the slighest evidence of decreased interest in or grasp of the new conditions faced by the industry.

Of particular interest is the similarity of views held by J. M. Keynes and Sir Charles as to the basic needs of the English industry, and their mutual regard of each other's ability. Sir Charles frankly expresses the belief, however, that there is as little likelihood of English spinners adopting the Keynes cartel scheme as there is of their introducing his control plan.

Certain self-appointed friends of the cotton grower who have criticised Sir Charles as an advocate of cheap cotton will find food for thought in his statement that "I am not one to gloat over the prospect of a trade success acquired at the expense of the American cotton grower. While cheap cotton must be an excellent thing for everybody in the long run, we have to remember that stability in price may be of much more importance than cheapness."

AMERICA, with an unprecedentedly large crop of cotton on her hands, is naturally anxious to know what prospects there are of Lancashire spinners coming forward and materially increasing their takings of American-grown raw material during the coming year, and it is to this problem that I have been asked to address myself by the Editor of the "TEXTILE WORLD" in a contribution I am requested to make to his Annual Review Number.

To venture into prophecy is a daring thing after so many years of deferred hopes, but certainly 1927 starts with much fairer promise than any year we have had since 1920, when we all descended from the dizzy heights of the boom into depths of slump and gloom such as the cotton trade has not experienced before in all its history. The chief factor which has raised the spirits of a great many of those who produce cotton goods is, of course, the availability of cheap raw material—cheaper indeed than it has ever been since the war commenced.

But there are many other factors which are contributing to optimism and impressing those in the trade with the idea that the tide has at last really turned, and that we are in for a period of greater activity than we have had in any year since 1913. We appear, for instance, to have surmounted the labour troubles that harassed us so terribly in 1926, although their disastrous results have still to be coped with. Some of the great countries in the East with which Lancashire has traded in the past are now reputed to be as well off as ever they were; merchants abroad have practically got rid of the high-priced stocks they had on their shelves, and are known to be wanting replenishments badly; and foreign exchanges which have for so long told so heavily against England are now on a much more workable level.

Trade With China

All these things will no doubt tell in England's favour, but one cannot shut one's eyes to the fact that there are, on the other hand, factors which are calculated to discount much of the enthusiasm which one sees expressed in English newspapers today. One of the greatest obstacles to good and permanent trade remains with us still in the unhappy condition of China. It is, I am afraid, little use for us to deceive ourselves as to the possibility of full prosperity with that country still carrying on civil war and proclaiming a boycott against all foreigners. China in the past has been Lancashire's second best market, and it has often had the credit of sensing the best time to buy and of taking the lead in doing business on a large scale. It was China, indeed, which started the big boom of 1919, and no doubt that country would be a large purchaser now if only its internecine troubles were out of the way. So that it is evident that we cannot rely on China for some time to come, let the Cantonese be ever so successful in their campaign, and notwithstanding that the price disparity between Lancashire-made goods and the inferior cloths made by Japan and other countries has been narrowed down considerably owing to the big fall in the cost of American cotton. The fact that Lancashire-made goods are now little dearer than low-grade foreign-made fabrics, however, may be expected to have an appreciable effect on the buying for India, South America, countries in the Near East, and many of the African markets.

Possible Shortage of Skilled Labor

Another item which will have to be put on the debit side is that a great many Lancashire mills will find themselves unable to take full advantage of a normal demand if it does come along. Owing to their huge losses during the past half-dozen years, many spinning concerns have been unable to spend money in keeping their plants up to concert pitch and for a time, at least, they are bound to be handicapped severely on the mechanical side.

In the weaving section, also, there is likely to be trouble in staffing for full-time employment, as owing to the amount of short-time worked for the past few years, a large number of weavers have sought employment in other trades. There is much controversy as to the extent to which manufacturers will be hampered in regard to this shortage, some holding that the lack of operatives will be very serious, and others that operatives who have spent the best part of their working life in the weaving sheds will be only too serious to get back to the work for which they have been specially trained, and at which, on full-time working, they are able to earn good wages. Personally, I think, the difficulty will not be a small one, for employment in the mills has been so precarious over a long period of years that those who have found better occupations are unlikely to give them up. Besides, those who are relying on a large number returning, are taking no account of the substantial emigration of cotton operatives from England which has taken place during the period of depression.

Producers Must Regain Initiative

I might enlarge on many other things which I consider will prevent us from using as much cotton as we ought to during the coming year, but one I must mention as being at the very root of our present position—one which has not only retarded business materially since the slump, but is likely to be no little hindrance to our getting back to full work again. In a New Year message to the London "*Daily Mail*" as to the prospects for the cotton trade, I made the following statement:

> "The markets of the world are denuded of cotton goods, but orders are still being withheld in the hope of a further fall in price. The producing side must get the initiative into its hands, and show buyers that there is no longer any advantage in a waiting policy."

This question of who is to have the initiative is the crux of the whole matter. At the time the slump set in the spinner and manufacturer lost it and ever since they have been at the mercy of the buyer. Time was when purchasers abroad were ready to take a suggestion from the manufacturing or merchanting side as to when was the best time to buy, but they have had things their own way for so long that they are now not amenable to any guidance whatever. Recently, the head of one of the Manchester warehouses, which in normal times does a large trade in coloured goods with Africa, sent word to one of his customers in that continent that he considered the time had arrived when it would be advantageous for the customer to replenish his stocks. Back came the answer, "Leave that to us: we will tell you when it is time to buy!"

It is the same in trade as it is in war. Once lose the initiative and it may be a very difficult and costly business to regain it. It has already cost Lancashire spinners and manufacturers scores of millions of pounds, and the unfortunate thing is that with all their losses and sufferings they are doing nothing to get back to the time when they can demand production costs plus a reasonable return on the capital they employ. Now, this is certain to be bad for trade during the coming year, for orders are not likely to be given freely if it is felt that there is no solid basis to work upon. It encourages hand-to-mouth buying and shatters confidence, no matter how cheap the raw cotton may be.

Keynes and Macara Plans Similar

Mr. J. M. Keynes, the well-known British economist, has lately been giving Lancashire cotton men his advice on this and other questions relating to the predicament into which they have allowed themselves to drift. He said that if Lancashire's trade was going to live in the world, economy had to be practiced. But the trade could only be revived on the basis of real economy, that was to say, producing it in some way or another more cheaply. Selling at a loss was no economy at all. There was all the difference in the world between a lower price which was the result of economy,

and a lower price which was simply taking from the spinner the money he ought to be putting to depreciation and other charges. Economy of that kind could not go on forever. The notion that Lancashire could permanently recover her trade by selling at prices which would not leave a fair margin was ridiculous. Many people talked as though a reduction in the price of yarn in that way was as good as real economy in production. He had every sympathy with those who said that Lancashire must produce cheaper yarn, but he had none with those who said that Lancashire could only regain her trade by taking a subsidy out of one section of it.

This is exactly what I have been preaching year in and year out, but little heed has been taken of it in my own country. In foreign countries, where my publications have been circulated very largely, I have reason to know that my recommendations to the cotton trade have been adopted eagerly, and wherever they have been adopted they have been completely successful. Mr. Keynes himself has evidently followed what I have written very closely, and the other day told a big Manchester meeting of mill directors, bankers and representatives of cotton associations, that "Sir Charles Macara had absolute right with him." His recommendation for getting back this lost initiative is the formation of a cartel, or yarn selling association; this, when explained, is somewhat similar to the Cotton Control Board I have advocated for so long. One of its most important features would be the collection, under compulsion, of full and complete statistics of all mill transactions, in order that those who guide its destinies may have the necessary data before them to control output, and keep the trade on a stable basis. Moreover, its aim, as was the aim of my own control scheme, is to be helpful to all its members, and not callously to allow the weakest to go to the wall, and above all, equally to consider the interests of the operatives. In my opinion, no scheme can possibly succeed which does not do this, and provide means of sustenance for the workers when, for the benefit of the whole trade, they are temporarily thrown out of employment.

Mr. Keynes, one is pleased to see, castigates unmercifully those who adopt the creed of the survival of the fittest with regard to the future of Lancashire mills. This short-sighted policy I myself have often condemned, for one need only ask who will be the fittest in the long run—the man who now owns a £2 spindle mill and prides himself on being able to pay a dividend, or he who would buy up a bankrupt mill at five shillings a spindle and be in a position to undersell all his competitors on the yarn market. It is not difficult to see who would suffer if the policy were put into practice. As Mr. Keynes said, "If the devil is left to take the hindmost he will take everyone in turn. It is not as though the hindmost disappears. When the devil takes the hindmost, what he does is to promote him to the top."

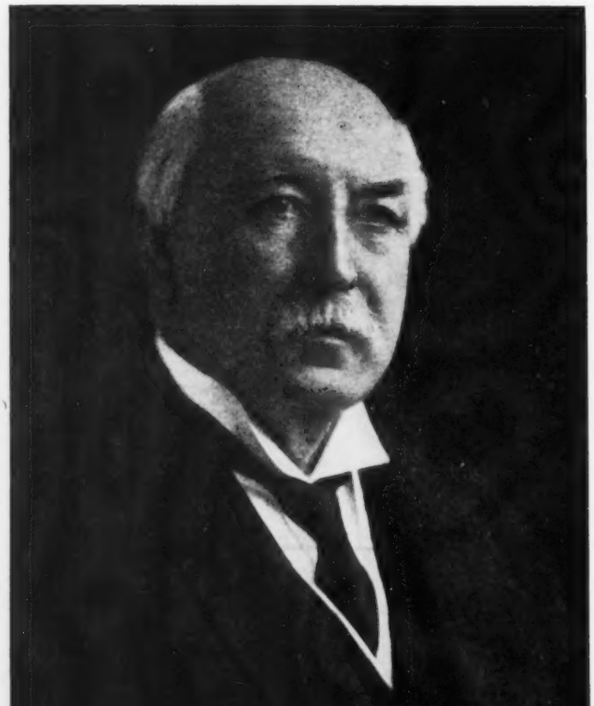
Little Enthusiasm for Keynes' Plan

There are evidences that there is little more enthusiasm among English spinners tor a properly organized policy to deal with the difficulties with which the trade is beset, than there was when I was fighting for the establishment of a control scheme for the industry two or three years ago, and I am afraid that this will prevent the trade of the coming year developing as it ought to do. By this, I do not mean that there will be no expansion in trade—we are already making and selling more cotton goods than we did—but at present we are simply extending our losses by extending our business, and this, of course, can only make matters worse. There has been so much blundering all around and the state of affairs is becoming so bad, that I have advocated that a brief moratorium should be declared, to allow the trade time to turn round and determine what can be done to prevent a national disaster. The losses imposed upon the mills by the seven months' coal strike have been the last straw, and fresh "calls" on shareholders for additional capital have been announced almost daily for some months past.

Between the banks, who are anxious to have their overdrafts safeguarded, and the loanholders who are draining the resources of the mills in order to make themselves secure, the shareholders are just now having a terrible time, and something will have to be done to ease the situation. Later on, when things get normal again, it will be imperative to alter the whole scheme of financing the cotton mills of Lancashire, for it is obviously impossible to perpetuate a scheme under which loanholders can flood the mills with money in good times, and withdraw it at call in hard times when the mills are in sore need of financial assistance.

Federation of Spinners Criticised

It is the habit in some quarters to blame "over-capitalization" for our troubles but it must never be lost sight of that the cost of building and equipping mills is double what it was before the war and those mills that have not been re-capitalized are not allowed by the Inland Revenue to depreciate more than on a pre-war scale. I think that in these circumstances, the mills that have not been re-capitalized are living in a fool's paradise. Again, the cost of the mills in other countries ranges from 50 to 100 per cent more than those in England, and this is a very serious handicap to England's foreign competitors in the cotton industry. While I hold no brief for unduly "watered" concerns, the fact cannot be hidden that it is the mismanagement and supineness of the Federation of Master Cotton Spinners' Associations that have brought us to our present pass. Had the Federation, five or six years ago abandoned its obsolete Articles of Association and acquired compulsory powers in dealing with its members; had it obtained complete statistics of production, consumption and stocks, which could only be got in conjunction with the operatives and with Governmental support, and then in a scientific manner regulated supply to demand, essential in an industry dependent for four-fifths of its employment on overseas countries which may be subject to contingencies over which the trade has no control, the enormous losses we have incurred would, to a very large extent, have been avoided. Under its present constitution, the Federation has never been able to do more than issue recommendations both in regard to short-time and basic prices, and it is common knowledge that these have been disregarded or observed just as it suited the business circumstances of its members.



Sir Charles Macara, Bart.

Power of Organized Industry

While practically every other industry has found it necessary to organize or combine to protect its interests, the cotton trade, which has perhaps most need of any to keep watch and ward, seeing that its ramifications are world-wide, has done nothing but stand helplessly looking on while a big proportion of its capital resources have been dribbling away, owing to the larger section of the trade making presents of twopence or threepence with every pound of yarn it produced.

Mr. Keynes, in his talk to Lancashire directors and bankers, made those present look very foolish when he compared the positions of different sections of the trade, half of which (the bleachers, dyers, finishers and calico printers) are organized, while the spinners and manufacturers have nothing worthy of the name of organization. A deputation of manufacturers, he said, had been to him complaining of the enormous burden to their trade involved in the charges for dyeing. He sympathized with them, but pointed out how impossible it was for a helpless body of disorganized individuals to make themselves heard and felt. "The half of the trade without organization," he told them, "are quite certain to be bled by the half that is thoroughly organized."

Prefers Stable to Cheap Cotton

From what I have written above it will be seen that while on general lines I am optimistic as to the future of the cotton trade, I do not close my eyes to the fact that we are not by any means out of the wood. The coming year is bound to be full of anxieties. I for one am not easy in my mind as to the price to which the raw material has fallen, for it cannot be to the ultimate good of the trade that cotton should be sold to the spinners of the world at a price lower than that at which it can be raised by the planter. The bulk line cost of cotton production during the past season in the United States, is given as "somewhere between 16 and 17c per lb. of lint," while middling American cotton at Liverpool out of the same crop is selling at round about 6¾d a lb. This raises qualms in one like myself, who has seen previously the

(Continued on page 217)

History of the 1926 Cotton Crop

A Year of Records—the Crop Reports—a Series of Shocks—What an Analysis of Bureau Reports Shows—Believes Report's Usefulness Justified in Large Part—Has Boll Weevil Met Its Waterloo? —Forcasting Unusually Difficult

By John A. Todd

Author of the "World's Cotton Crops."

In this article Dr. Todd, who has been a frequent contributor to TEXTILE WORLD and is an authority on world cotton conditions and statistics, emphasizes certain peculiarities of this season's crop of American cotton, explains why it is unusually hazardous to attempt to forecast next season's yield, and advances the opinion that the big American crop and resultant low prices will be highly discouraging to planters and promotors of new foreign fields. He repeats a previously expressed opinion that early indicated crop reports are discredited, but refutes the idea that the Bureau should be expected to do more than report abnormal crop conditions.

THE year 1926 will certainly go down in history as one of records, both good and bad, in regard to the cotton crop. In the first place, the area planted, 48,898,000 acres, was 2,450,000 acres more than the corresponding figure of June 25th last year which again was 6,045,000 more than the corresponding figure of the previous year. The writer has called attention frequently to the fact that for many years back (with only a single exception) the revision throughout the season of the figures of acreages planted has always been upwards and substantial, and in that respect this year so far makes a favourable comparison with its predecessors, because the first revision in December of the acreage planted has made the smallest change in the original estimate that we have known for many years.

The following table summarizes the figures with regard to acreage planted, harvested and abandoned since 1921:

AMERICAN COTTON CROP: ACREAGE PLANTED AND HARVESTED AND ABANDONMENT
(000's omitted)

Crop	Planted				Harvested			Abandonment	
	1st	2nd	Final	(3) on (1) + or —	1st	Final	(5) on (4) +or —	(5) on (3)	Per cent on (3)
	(1)	(2)	(3)		(4)	(5)			
1921	26,519	32,332	31,678	+5,159	31,427	30,509	—918	1,169	3.7
1922	34,852	34,485	34,016	—836	33,742	33,036	—706	980	2.9
1923	38,287	39,224	38,701	+414	37,420	37,123	—297	1,578	4.1
1924	40,403	41,490	42,641	+2,238	40,115	41,360	+1,245	1,281	3.0
1925	46,448	48,160	48,090	+1,642	45,945	46,053	+108	2,037	4.2
1926	48,898	49,086	.....	+188	47,653	.....	.....	1,433	2.9

Calculated from the percentage abandoned.

Causes of Recent Acreage Increases

There is, however, another interesting point with regard to the acreage. For many years there has been a very definite tendency for the weight of the acreage to move westwards, the percentage of the total in the states west of the Mississippi rising steadily. Thus in 1925 this percentage had risen to 59.8%, but in the first estimate for this year it was only 58.7% and that has been still further reduced to 58.2% in the December revision.

This is remarkable not only in itself, but also as an explanation of another striking thing in regard to recent acreage figures. For many years up to 1924 a very close connection had become evident between the average price of each season and the acreage planted in the following year; but in 1925, in spite of the lower prices of the previous season, the acreage again showed a huge increase and this was repeated on a smaller scale in 1926. There are two explanations of this, the first being that the recent steady rise of the acreage has been partly due to the improved methods adopted by the Department in estimating the area planted, but that of itself seems insufficient without the second reason.

What the planter looks at in deciding how much cotton to plant each season is not merely the price of cotton per pound, but the actual monetary yield of his total crop, and in the last three years, owing to the steadily increasing yield per acre, the cash yield of the crop must have been in many cases fairly satisfactory to the growers in spite of the low price. This, however, makes it difficult to forecast the probable effect of recent developments on next year's acreage. According to the latest estimate the average yield per acre this year is the highest since 1914, and this will to some extent counteract the very low level to which prices have now fallen, and to that extent will check the tendency to reduce the acreage in 1927.

Bureau Reports Analyzed

But this very fact of the record recovery of the yield per acre recalls what has been the most undesirable feature of the year, namely the extraordinary series of shocks administered by the sequence of Bureau reports throughout the growing season. We present a table analyzing the history of these reports since 1924, and the crucial point, viz., the indicated crops, is embodied in the annexed diagram, in which, however, in order to get a more comprehensive view of the whole position we have included each season back to 1918.

On examining this diagram it will be noted that there is a central group of the years from 1918 to 1924 (omitting 1921) in which the behaviour of the curve as a whole followed a fairly normal course. The season of 1921 was entirely exceptional, but that was due largely to the fact of the enormous error in the first estimate of acreage planted, the effect of which

Prof. John A. Todd

is shown in the big rise of the crop indication from September 25th to December 1st. On the other hand the curve of 1925 lay almost entirely outside and above the normal group, while 1926 so far as it has gone lies still further above all its predecessors. The rise in this case from September 1st to December 1st is absolutely unprecedented, both in its height and in the fact that it went on without a break and with hardly even a bend in the line. And this behaviour is all the more remarkable when it is kept in view that there has been no raising of the estimate of acreage this season, so that the whole of the increase in the anticipated crop is due to the improved expectations of the yield per acre.

What Happened to Boll Weevil

There is only one explanation of this fact: there has been practically no boll weevil this year again. That is likely to prove the crucial fact in the history of this crop. It is crucial because, while in 1924 and 1925 the absence of the weevil was accounted for by climatic conditions, i. e., severe drought throughout the summer, the weather conditions have been quite otherwise this year, apparently ideal for the weevil, and yet again there is no weevil. The astonishing thing is that no official theory has been put forward to explain this; but a further examination of the history of the condition reports seems to the writer to suggest a possibility which is worth considering. As will be seen from the table, the condition figures this year began high and remained high till August 1st, but after that they suffered a heavy drop, due mainly to the alleged damage done to the crop by the hopper flea, which during the summer had attracted a great deal of attention. That, however, passed just about the time when reports of weevil damage normally begin to pour in; and the extraordinary rise of the indicated crop figures from September 1st onwards is just the measure of the extent to which the crop gained

HISTORY OF THE AMERICAN CROP, 1924-1927

As at	1924-25	1925-26		1926-27	
Condition,					
25th May	65.6	76.6		None	
25th June	71.2	75.9		75.4	
16th July	68.5	70.4		70.7	
1st August	67.4	65.6		69.8	
16th August	64.9	62.0		63.5	
1st Sept.	59.3	56.2		59.6	
16th Sept.	55.4	53.8		59.5	
1st October	53.5	56.6		61.3	
18th October	54.7	.....		.....	
1st Nov.	55.9	.....		.....	
Yield per acre, lbs.		Planted	Harvested	Planted	Harvested
25th June	143.8	147.0	.....	152.9	158.5
16th July	141.3	140.0	.....	150.2	155.8
1st August	146.5	139.8	.....	152.7	158.3
16th August	153.5	144.1	.....	149.1	154.6
1st Sept.	151.5	141.5	.....	148.3	153.6
16th Sept.	149.2	143.5	.....	154.5	160.0
1st October	148.0	152.0	159.7	162.5	168.4
18th October	150.1	156.8	164.7	.....	176.7
1st Nov.	151.6	158.5	166.4	.....	181.4
14th Nov.	153.7	157.6	165.5	.....	186.3
1st Dec.	156.8	.....	162.3	.....	187.0
Final	157.6	.....	167.2	.....	.....
Indicated crops	(000 bales of 500 lbs. gross)				
25th June	12,144	14,339		15,635	
16th July	11,934	13,588		15,368	
1st August	12,351	13,566		15,621	
16th August	12,956	13,990		15,248	
1st Sept.	12,787	13,740		15,166	
16th Sept.	12,596	13,931		15,810	
1st October	12,499	14,759		16,627	
18th October	12,675	15,226		17,454	
1st Nov.	12,816	15,386		17,918	
14th Nov.	12,992	15,298		18,399	
1st Dec.	13,153	15,603		18,618	
Final	13,628	16,104		.....	
Ginnings (000's running bales)					
Prior to:					
1st August	22	162		48	
16th August	136	579		182	
1st Sept.	947	1,886		697	
16th Sept.	2,666	4,282		2,511	
1st October	4,528	7,126		5,643	
18th October	7,616	9,519		8,732	
1st Nov.	9,716	11,207		11,257	
14th Nov.	11,162	12,260		12,959	
1st Dec.	12,238	13,871		14,645	
13th Dec.	12,792	14,832		15,542	
16th January	13,307	15,500		.....	
Final (March)	13,639	16,123		.....	

by the apparent absence of the weevil.

Weevil Defeated by Rival Pests

Is there not in this history a possible explanation of what has happened? The hopper flea attacks the young squares which are the food of the early broods of the weevil. The destruction of these may have checked the early growth of the weevil this year and so reduced its normal rate of increase throughout the summer. Then, as it happened, towards the end of the summer came a very bad attack of army worm, which by stripping the plants of their leaves exposes the weevil to the sun and accelerates the opening of the crop. The suggestion is therefore that the weevil this year has been crushed between the upper and nether millstones of two rival pests.

Abnormalities Not Anticipated

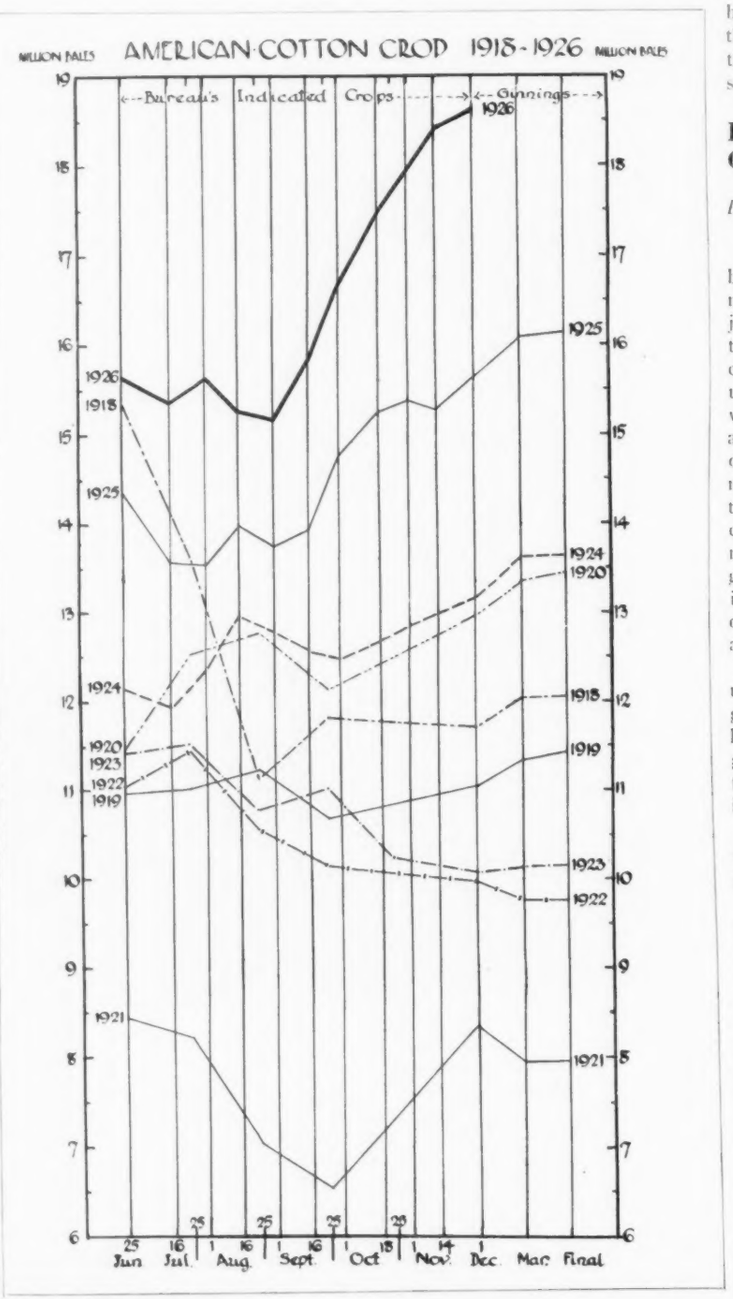
But if this, or anything like it, should prove to be the true explanation it throws a new light on the question of the Government reports, for these reports are arrived at by applying an estimated figure, representing this year's conditions, to a supposed normal figure derived from the accumulated experience of previous years. If then one year proves entirely abnormal we must expect that in the latter part of the season, when the reports come nearer actuality, being founded mainly on the ginnings, the curve of the indicated crops will depart seriously from the normal, and that is exactly what has happened this year. Put in another way it means that the Government's reports in the early part of the season, founded on normal expectations, proved seriously wrong in the latter part of the season, because the conditions then became entirely abnormal. But in that case what is the criticism of the Government reports? Simply this, that they did not anticipate an entirely abnormal state of affairs, but when it happened they reported it promptly and with increasing accuracy. It seems to the writer that that is just about as great a success as any such system of forecasts could hope to achieve.

Would Eliminate Early Figures

But this still leaves a sting in the criticism. If it is possible for conditions to change so completely during a season, what is the good of early reports based on normal conditions which cannot be relied on to remain normal throughout the season? Would it not be better to cut out the indicated crop figures from the earlier reports, leaving the trade to make its own guesses, based on the condition and the acreage, and to defer the publication of official crop forecasts until some time in October when the volume of the ginnings would begin to be some guide to the probable actual outturn of the crop?

Forecasts Are Hazardous

Still another very unsatisfactory record remains to be attributed to this season. Never before have we been left in such hopeless uncertainty as to what is likely to happen next year. The acreage will probably be reduced, but it is impossible to guess how much, whether 5% or 25% as it was according to the first figures in 1921. No one can of course guess what the weather will do next year; but what are we to say of the prospects with regard to boll weevil, when we are completely in the dark as to the causes of what happened in 1926?



And this uncertainty as to next year's crop is the one factor which is making it impossible to estimate the probable developments of the remainder of this season on the other side, namely consumption. The world's supply this year is huge, but the world's needs are equally great, and at present prices even a crop of 18 million bales, excluding linters, need not prove burdensome. But what if we are to look forward to another 18 million bales next year? That is the real bugbear of the market today. If the cotton world were sure that cotton prices are not going lower, they would very quickly dispose of the apparently burdensome surplus of the present crop; but to do so every year in succession would be more difficult. But will there be any necessity? What if the conditions next year should once more be favourable to the weevil, and this on top of a substantial reduction of acreage?

It only remains to add that present conditions are as unsatisfactory for cotton growers in other parts of the world as they are for the American planter. "Shilling cotton" has been the best friend of the pioneers of cotton growing in the British Empire, as well as in every other part of the world. At present prices all these new fields will be seriously discouraged, and many of them will have a hard struggle to survive. The position of the American growers in the world's supplies is still so completely dominant that they need have no jealousy of all these new and smaller fields; and until we see some prospect of the normal yield of the American crop being stabilised from one year to another, it would be a bad business for the world if all the other supplementary fields were driven out of business. They did yeoman service in the years of scarcity of American, and they may well be wanted again for similar service in future years.

Expects Larger Volume of Cotton Goods Business

By John Bancroft

President, Joseph Bancroft & Sons, Co., Wilmington, Del.

The reports brought to my notice by market representatives and the news items in the various textile trade journals and leading financial publications, seem to indicate that sales of cotton cloths have been made in unusual quantities during the last few weeks, and orders for considerable amounts have been taken for forward delivery into, and through, the summer months. This would seem to justify me in thinking that business in cotton goods for the approaching months might be expected to be as good, if not a little better, than during the same months last year with, of course, prices for the gray goods about 20% lower.

If this reduction is passed on to the ultimate consumer and employment generally is maintained at the present level, the volume of business in cotton goods is likely to be larger for the first half of this year than it was during the same period last year.

Outlook Good for First Six Months

By Charles Bragg

Treasurer, The Central Worsted Co., Central Village, Conn.

We feel that things look very favorable for the first six months of this year and we base our opinion more on the cotton situation than anything else, for the cotton cloth market certainly is in a better position than it has been in several years. We also take into consideration the fact that the market is demanding much heavier goods for men's wear in the heavy weight lines than we have made for years and that demand is bound to consume from 2 to 3 ozs. more of woolen and worsted yarns for every yard of cloth that is made, and that surely will increase the consumption of wool and worsted yarns to quite an extent. We also find that the market is quite bare of this class of merchandise.

We think there is no question but that prices will be maintained on about an even keel until July 1 anyway. We cannot see any good reason for prices to advance very much, but very many reasons why they should be firm. The woolen and worsted generally follow the cotton market and that is favorable to-day.

More Cotton from Fewer Acres

By Making Cotton a Surplus Crop, and an Intensive Agricultural Operation Average Production Costs May Be Greatly Decreased and Quality Improved—Remarkable Results of Texas Prize Cotton Contests—The Causes and Penalties of "Snapping" and "Sledding"

By George W. Fooshe

The author emphasizes the fact that, while prospective acreage of the 1927 cotton crop is of commanding interest at the moment, it is not so much the aggregate acreage that is of importance as it is the yield per acre.

He is an advocate of more cotton and better cotton from fewer acres, with resultant increased profit to the grower and lower cost to the spinner. He instances several factors that are influencing such a movement, among the most striking being the "More Cotton on Fewer Acres" contests in Texas.

Inadequate labor supply for picking is the neck of the bottle for many growers, and more cotton from fewer acres minimizes this difficulty and is much more economic than "sledding" as commonly practised this season in parts of Texas and Oklahoma.

INTEREST in acreage to be seeded to cotton in the South in 1927 transcends that in any other phase of the industry at the moment because of the bearing this is likely to have on production and therefore on prices for the next twelve to eighteen months.

This question therefore vitally concerns cotton growers themselves as well as textile manufacturers who rely upon American cotton for their principal raw material supply.

The acreage question is a perennial one. But it is now coming in for intensified consideration incident to the fact that production is expanding more rapidly than consumption; that constant additions are being made to the surplus of American cotton, and that prices have dropped to a level representing about 40 per cent of the average for 1923-24, about 50 per cent of that for 1924-25 and about 66 per cent of that for 1925-26.

Even though consumption in 1925-26 broke all previous records, at 15,165,000 bales, and even though prospects are for the use of around 16,250,000 bales the current season, present promise is that the carryover, as of July 31, 1927, will approximate 9,000,000 bales, or more than 50 per cent of the maximum ever worked up by textile interests in the space of twelve months.

Production of 16,122,000 bales in 1925-26 virtually equalled the previous maximum established in 1914-15, while that in 1926-27 is officially estimated at 18,618,000 bales, or about 2,500,000 bales larger than ever previously grown.

This unprecedented expansion in production is the result of two factors: The tremendous increase in acreage and the decided gain in per-acre yield. Harvested area jumped from 41,360,000 acres in 1924-25 to 46,053,000 in 1925-26 and to 47,653,000 in 1926-27, while yield per acre, 157.4 pounds in 1924-25, rose to 167.2 in 1925-26 and to 187.0 in 1926-27.

Must Reduce Acreage or Cost

There appears to be ample basis for the quite generally accepted belief that, even after due allowance is made for the compensation arising from increased yield per acre, prices received thus far this season have been somewhat below the cost of production. The latter is extremely variable and therefore unusually difficult of determination. But the rank and file of growers are enjoying very little profit and in many instances are actually losing money. They are face to face with the alternative of restricting yield through curtailment of acreage or of materially cheapening the cost of production.

On the surface, it looks as if acreage reduction would prove the surest and simplest method of solving the immediate problem of growers. It should be noted, however, that there is not the slightest probability of harmonious or uniform action on the part of planting interests in different portions of the South. Chances are that growers in some sections who curtail their acreage will merely cut down the quantity they will have to sell while the price will be determined by the production of those who fail to reduce their acreage, or who, perhaps, as has been known to happen, actually increase the land seeded to cotton.

Increasingly Varied Acreage Yields

There is also a conflict of interest among growers in different parts of the South resulting from the tremendous difference in yield per acre and in the net return enjoyed. Growers in areas brought under cultivation in western and northwestern Texas and western Oklahoma, for instance, can make themselves rich at prices which represent poverty or actual suffering in some of the older sections of those States as well as in other producing areas in the South.

Restriction of acreage, too, for the mere purpose of cutting the yield and boosting the price, even if it could be made uniform, would not prove a real solution. Quantity available for sale is just as important a factor in what the grower receives as the price at which he sells. Two hundred and fifty pounds of lint cotton at 10c a pound will bring him just as much as 100 pounds at 25c.

Both Yield and Quality

Some students of the cotton growing industry are convinced that the way to put this on a permanently sound basis will be found in increasing the yield per acre and improving the quality of the product.

The former will result in substantial reduction in the per-pound cost of production and the latter will add appreciably to the price spinners are willing to pay for the superior fiber. Both will materially add to the margin of profit of growers, the end to which they are devoting their time, energy and money.

It costs no more for preparation and cultivation of a given area producing 500 pounds of lint cotton per acre than for one yielding 50 pounds. It costs more to harvest, gin and bale the larger yield than the smaller, but this increased cost is largely offset by the difference in the amount of money received for the seed obtained from the former.

It is equally true that cotton running 1 to 1¼ inch in staple can be produced as cheaply and will yield as abundantly as that of ⅞ inch or shorter. The former commands a premium of one to twelve cents a pound over the latter, especially in the better grades. Not all the land in the South is strong enough to produce fiber longer than ⅞ inch, and the area in which 1 3/16 to 1¼ inch can be grown is largely confined to the alluvial region of the lower Mississippi valley. The bulk of the land in the South, however, will easily produce staple 1 to 1⅛ inch and premiums on these lengths run from 1 to 6c per pound over ⅞ inch on middling and grades above, even at the prevailing basic level.

Cotton growers of the South are therefore face to face with the necessity of using every available means of reducing the cost of production, increasing the quality of their output and enlarging their net return.

Cotton as a Surplus Crop

Aside from increasing the per-acre yield through intensive cultivation and improving the quality of their output by planting varieties yielding staples in excess of ⅞ inch, the most effective means of decreasing the cost of producing cotton lies in raising on the farms of the South everything possible that enters into the growing of the former.

This idea is so illuminatingly developed by C. T. Revere, of Munds & Winslow, New York, in a recent letter of that firm, that the following copious excerpts therefrom are reproduced herewith:

"Cotton is a 'money crop.' It should therefore be a surplus crop. It should be an *agricultural* and not an *industrial* operation.

"If the growing of cotton should be pursued along agricultural lines, other farming operations would take precedence over it. The producer, first, would make sure of his living from his land, raising hogs, chickens, vegetables for his table and for home canning in the winter, hay, corn and oats for his farm animals. The rest of his energies should be devoted to the production of cotton which would give him cash for additional necessities, comforts and even luxuries.

"Herein lies the answer to those who contend that there is no substitute for cotton. If home living and feed for farm animals are given first consideration, acreage can be what it may, for it will take care of itself.

"By the industrial method, the grower concentrates on cotton, giv-

A Cotton Sled, as Operated in Northwest Texas, for Harvesting Cotton

ing it preference over all other production with a view to exchanging this cotton for his living necessities, his vegetables, fruits, meat products and other commodities which his own farm can provide. . . .

"By producing farm necessities which would provide the family living and probably give a moderate surplus for which cash or groceries could be obtained, the average cotton producer would fortify himself against the evils of crop failure or decline in prices and at the same time control the production of cotton so that he would get a fair return for his 'money crop'.

"By following this method, the production of cotton would become an *intensive* instead of an *extensive* operation. Better cotton would be grown. More cotton would be produced on fewer acres. It would be more carefully picked and marketed in better fashion."

Low Cost Cotton at a Profit

If there is any doubt about intensive cultivation as a means of increasing per-acre yield, it is immediately dispelled by the results of the "More Cotton on Fewer Acres" contest conducted by the Dallas Morning News in 1926. These, which have just been made public, disclose that the eighty most successful contestants produced from 2,400 to 6,070 pounds of lint cotton on the five acre tracts representing the unit of area. This at the rate of 480 to 1,014 pounds, or one to two and twelve hundredths bales of 478 pounds, per acre.

The report of Victor H. Schoffelmayer, the manager of this contest, indicates that comparatively little fertilizer was used, but it shows that unusual attention was given to soil preparation, to seed selection, to cultivation and to protection of the crop against hoppers, weevil and other insects. Figures on cost of production have not yet been published, but, in outlining the lessons derivable from the contest, Mr. Schoffelmayer includes the following:

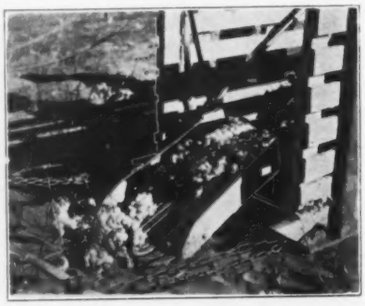
"That the higher the yield the lower the cost of production, thus enabling contestants to meet 10 and 11 cent cotton prices and still show a substantial profit over cost of production".

This intensive method, in addition to reducing the cost of production through increasing the yield per acre and through providing more of "home living", also paves the way for better conservation of the soil. Lands that are seeded to crops representing living necessities are given wholesome respite from constant planting to cotton, and those that are seeded to clover, peas and other "cover" crops are materially enriched through the nitrogen and other vitalizing elements these put into the soil. The winner of the Grand Prize in the contest to which reference has already been made secured his yield of more than two bales of lint per acre on land which, although planted to cotton for the four preceding years, had been under clover for eight successive years prior to reseeding to cotton.

Growing of "more cotton on fewer acres" also means a more adequate labor supply for harvesting. This insures prompter picking and thus conserves the grade of the crop. The latter, in turn, materially enhances the grower's profit. There is easily a difference of 2 to 3 cents per pound between strict to good middling which is harvested as such and the same cotton left in the fields until it grades from low middling to strict low middling because of damaging exposure to the elements.

"Snapping" and "Sledding"

More acreage is planted to cotton in all portions of the belt than can be adequately cultivated and so harvested as to insure the best results in



Cotton Sled Equipped With Steel Fingers

the way of grade. But the most glaring example of production out of all proportion to harvesting facilities is seen in western and northwestern Texas and parts of central and western Oklahoma. In these areas land is broken with tractors and gang plows and cultivation is effected by machine methods. As a result, two or three persons can produce more cotton than a score can pick. The upshot is that only a small percentage is gathered by hand even when prices are moderately high, the remainder being pulled or snapped, with irregularity of fiber and inclusion of much foreign matter.

When prices are low, however, cotton is harvested with sleds. There are two types of these, as shown in the accompanying illustrations. One strips every vestige of limb, leaf, burr, and boll from the plants which pass through a four-inch slot in the bottom of the sled. The other accomplishes a somewhat similar result by means of steel fingers.

It requires about 2,000 pounds of this agglomeration to make a 500-pound bale of lint cotton and the latter commands about two cents a pound less than cotton of similar character picked by hand.

Efforts are being made to improve these sleds, but, in their present crude stage, although effecting a huge saving in harvesting cost, they involve much waste. They also impose a tremendous burden, in the way of price depression, on producers in other portions of the belt.

This wholesale growing and harvesting of cotton in these areas in Texas and Oklahoma make it imperative that producers elsewhere follow the "intensive" plan if they are to reduce their cost and if they are to insure a product of sufficiently good grade and staple to enable them to survive this unequal competition.

Benefits Spinners and Growers

There is nothing in the "intensive" system that should arouse the slightest antagonism among spinners or that should penalize the latter in the way of prices. Indeed, any plan that involves increasing the per acre yield and insuring cotton of superior spinning quality should be welcomed by all manufacturers of cotton textile products. This method contemplates no reduction in acreage beyond that essential to produce home living for the family and feed for farm animals. In the end, by putting the cotton growing industry on a permanently sound basis, it will pave the way for steady enough expansion in area to insure all the cotton that can be consumed.

The writer is confident, after years of study of the subject, that the ultimate salvation of planting interests in the South lies not in curtailing acreage and increasing the price through reduced yield but in: (1) increasing the per acre yield, thus reducing the per-pound cost of production; and (2) so improving the quality of their product that it will adequately meet the requirements of the textile industry and therefore command a correspondingly high price.

The former method is of doubtful expediency from the standpoint of growers themselves, while it cannot fail, if long pursued, to impose a tremendous handicap on the very industry on which the former, in the final analysis, are necessarily dependent in the marketing of their product. The latter method, on the other hand, has the virtue of insuring a larger net retur to growers and of providing textile manufacturers with a sufficient supply of desirable raw material at workable prices to enable them constantly to expand uses of the staple.

The one system contemplates a gradual contraction in the amount of land seeded to cotton in the South where the area coming into cultivation is constantly increasing. The other makes it possible to utilize a substantial portion of these newly-opened areas in the growing of cotton. The former runs counter to the law of progress and the spirit of the times while the latter is in thorough harmony with both.

World Cotton Mill Conditions

Summary of Situation in Various Countries Abroad as Reported by the International Federation

THE following reports of the state of the cotton industry in the various countries are published in the current issue of the *International Cotton Bulletin*, the official organ of the International Federation of Master Cotton Spinners' Association:

Belgium—During 1926 a 50% increase in wages has been made to the operatives, and compared with March, 1923, the increase is 85%. This is owing to the increased cost of living. Work in the spinning mills proceeds on a normal basis. The export trade is quiet.

France—The mills are working full time, but it is doubtful whether this state of affairs can continue for long.

Germany—The engagements of the spinning mills early in December were satisfactory. Receipts of new orders in different branches have fallen off. Complaints still continue to be made to the effect that despite the improved state of trade prices are unsatisfactory. This is evidently due to the fact that foreign yarns are being offered at prices which are below the actual cost of production in Germany, and which no doubt are below the cost of production in the countries from which they originated. It seems that Germany is continually being used as a "dumping ground" for the surplus yarn from neighboring countries.

Holland—Spinners are better engaged than some time ago. Yarn prices are rather poor, but nearly all the mills are working full time. Most of the weaving sheds are working full time, but nearly all manufacturers complain of the poor prices obtainable.

Hungary—Cotton spinning mills are at present fully engaged and are working between 56 and 60 hours per week. The weaving sheds are also working two and even three shifts.

Italy—The increased stocks of yarn have induced several mill owners to curtail production. The lack of cloth orders has rendered a partial curtailment of production necessary in the weaving sheds. On the whole the Italian cotton trade is experiencing a real slump due to the measures introduced by the Government in order to enforce a deflation of the currency. The export trade is also rendered more difficult through the too constant appreciation of the lira. The future outlook is not promising.

Japan—Conditions in Japan still continue to be depressed. The home trade is dull and export trade, especially to China, is very difficult. The margin of profit is extremely small. The number of spindles working is about the same as recently.

Russia—The output in the cotton industry in 1925-26 shows an increase of over 89% as compared with 1913 (2,238,000 metres in 1913, and 1,995 million metres in 1925-26). During 1925-26 the last of the pre-war enterprises which could have been set in operation have been started. What enterprises now remain will require much expenditure on mill construction or re-equipment or both.

Switzerland—The Swiss cotton industry must still be regarded as being very unfavorable.

What About the Converter?

What's Going to Happen to Him in the Modern Revolution in Textile Distribution?—He Has Changed Materially in the Past but the Future Promises Still More Radical Developments—Tendency Toward Integration the Outstanding Factor

By Douglas G. Woolf

In these days of merciless competition, no factor in textile manufacture or distribution is able to claim a "divine right" to existence. The function of each is being continually scrutinized and its perpetuation constantly threatened—at least conversationally, if not actually.

Most of the verbal ammunition has been aimed at the jobber. His fate has been decided on paper so often and in so many different ways that it is doubtful if he himself knows whether he is in business today or not.

But what of the merchant converter? Copeland, in his book "The Cotton Manufacturing Industry," defines this term as "applied to the class of men who buy cloth in the gray, have it converted, and then sell it to the wholesaler or large retailer." Certainly, a complex function of this sort cannot hope to escape inquiry—or change—in today's textile cataclysm.

The writer wandered around and tried to sense some of the problems the converter is facing in meeting changing conditions. The results of his wandering are set down in the accompanying article—for what they may be worth.

IT can be set down without fear of contradiction that the merchant converter has played, and is playing, an economically important part in textile distribution. In many of the industries, a function such as he performs would not be a logical one. But in cotton goods, where the manufacturing is composed to a large extent of small units, an intermediary of this type has been practically a necessity.

The great majority of gray goods mills have had neither the flexibility, the experience, nor the personnel to enable them to carry their product into the finished goods field. Most of them would probably have encountered disastrous results if they had made the attempt.

On the other hand, a converter is, or should be, a specialist not only in gray goods prices, but also in finishing possibilities and in current style demand. He has the entire gray goods and finishing fields on the one hand and the entire market for finished goods on the other. It seems logical to assume therefore that he can get goods finished more efficiently and pass them into consuming channels with less style mortality, than could the average mill.

It is surprising then to find that the position of the merchant converter in cotton goods has not strengthened in recent years — but, on the whole, has weakened.

Like most other broad movements, this has been due very largely to outside influences. It has been due in fact to the new form of competition in which, as a banker recently expressed it, every man is a competitor of every other man. Encroaching upon the field of the converter in recent years have been numerous agencies which in the past were not even remote business antagonists.

One of these competitive agencies has cropped up as the result of certain broad style changes which are too well known to require lengthy comment. The production items, such as ginghams, percales, prints and linings, which the large mill units formerly had, do not exist in like quantity today. These units therefore have been forced to direct their activities into lines formerly specialized in by the converter. In addition to competition from what may be called manufacturing converters, the merchant converter has suffered from inroads into his field on the part of the so-called consignees.

From every side, there have been growing up new competing forces that not only limit the volume which the converter can handle but, far more important still, are narrowing his profit possibilities to an alarming extent. As an added complication, he faces the present style mania, which increases his risks enormously.

If the good, sound converting firm, however, had nothing to face but honest, straight-forward competition, he could undoubtedly adjust himself to the new conditions and remold his business structure to meet them. He has had, however, in addition to this, unsound competition from the "office under his hat" converters and others who imitate cloths in an inferior way and soon wreck a perfectly good market; and from other factors who from some reason or other are impelled at the moment to name prices which no self-respecting merchant can meet.

What the Change Means

Nor has the effect of this change been any less complicated than the change itself. Some of the fine old houses of days gone by have passed out of the picture, to everybody's regret. There has been an increase in the number of speculative houses, who visualize the function of a converter, not as a creative one, but as one in which they must "get in" and "get out" as quickly as possible. On the other hand—and this is the encouraging feature of the whole development—there have grown up a certain number of real merchants who recognize the need for intelligent merchandising and mental flexibility and who are creating well organized business houses, readily adaptable to further changes as conditions necessitate. The outstanding feature of these converters is their creative specialization. Instead of dissipating their energies over the entire field, or spending time in regrets over fabrics which are lost to them, they are developing quality cloths of an original nature, advertising them nationally, and merchandising them intelligently.

In their personnel, they are developing specialists who are experts on certain functions. In this connection the writer, who professes an academic interest in matters of organization, has been somewhat surprised in the past at the manner in which the average converting firm is departmentalized. He has found that the split is usually by types of fabrics. In other words, within one house there will be several departments, each handling a different kind of goods, and each carrying the three-fold function of purchasing gray cloth, having it converted and arranging for its sale.

In his opinion (with reemphasis on the fact that it is academic) a much more logical and efficient arrangement would be organization by these functions—that is a consolidated department for the purchase of all gray goods; another for the determination and development of styles; another for contact with the finishing plant; and another for the sale of all goods.

The main advantage of this plan, which might be called a horizontal rather than a vertical cleavage, would be the development of more intensive specialists for these individual functions than can be possible when each department head is attempting to cover so many fields of effort. It would also mean a larger and more concerted buying power for the gray goods purchasing department.

In his investigation, he encountered one firm which has such a type of organization, with one exception, namely that it has been found impracticable to concentrate the styling function in one department. Instead there are experts on the important fabrics merchandised by the company and the principal job of each of these men is the determination and development of styles for his particular cloths. In other matters, however, these men are kept as free from details as possible. They have at their command a concentrated designing department, a well organized advertising department and other intra-company agencies on which they can call for skilled help.

Contact with Bleacheries

Nor is internal organization the only problem which really sound converters find they must solve if they are to continue in existence. They recognize the need for closer and more intelligent contact with the finishing plants who process the goods. Out of the writer's own bleachery experience comes a vivid recollection of the apparent lack of recognition of any mutuality of interest between the cotton goods finisher and the merchant converter. The blame for this rested on both sides.

The indefiniteness of the orders received, the lack of regard for the character of equipment installed in a plant, the ignoring of the difference between short and long runs so far as the bleachery was concerned, and the unfairness of some of the time requests made—all these helped to make the life of the average finisher a distressed one mentally and an insecure one financially. On the other hand, the lack of an efficient organization within the finishing plant and the ignorance of real knowledge of both cost and equipment made it impossible for the finisher to cooperate intelligently with a converter even if the latter had shown an inclination to do so on his part.

There has been a very decided change, however, in bleachery management, as indicated in a series of articles published in recent years in TEXTILE WORLD. The up-to-date finisher now knows just how much difference in cost there is between a short and a long run on a certain type of printed fabric, for example. He knows just what he can promise in the way of deliveries. He knows what his organization and equipment can and cannot do in the fulfilling of certain requirements. And he passes this information along in no uncertain terms to the converter.

The latter on the other hand—or rather the one who has any hope of continued existence—has found it necessary to take steps himself to learn the important details of the finishing business so that he may place his orders as intelligently and efficiently as possible. Many of the larger firms have in their organization technical or semi-technical men who can insure the maintenance of proper contact with bleacheries, so important from both standpoints. Further and more intensive develop-

ment in this direction would seem to be inevitable.

Selling Changes

Nor is it possible for the selling end of the converting business to continue without change. It is true that in the buying of gray goods, the importance of the broker has not been lessened, as his activity still is regarded as a legitimate function due to his ability to keep constantly in touch with prices over the market as a whole, in a way that no one converter could do. But in selling it seems evident on investigation that constantly more and more goods are passing from the converters to the larger retailer. But this is only part of the picture. Mentally alert converters have found that they have had to organize branch offices in the larger centers of the country; have had to establish the closest sort of contact with all factors connected with the distribution of their goods; and have had to avail themselves of the best principles of modern advertising and merchandising. Those who are not alive to this necessity seem to have little chance for a successful existence.

Tendency Toward Integration

But these changes, the need for which has been realized by some and must eventually be realized by all, are insignificant compared with a movement which, it must be admitted, is more a future probability than a present achievement. This is the tendency towards integration.

Charles Pinnell, president of Fred Butterfield & Co., Inc., in an interview in last year's Annual Review and Forecast Number of TEXTILE WORLD, expressed the belief that the next few years would bring about combinations in the cotton goods business, composed of manufacturers, finishers and converters under one management and distributing a finished product direct to the retail trade. These combinations, as Mr. Pinnell expressed it, would be ones in which the merchant would do the development work —and not the engineer.

Since that time, his own company has entered into an arrangement with S. Slater & Sons, Inc., of Webster, Mass., to act as national selling agents to style and distribute the product of that mill's clothiers' lining department. Slater has discontinued the merchandising of wash fabrics and shirtings under its own name and will do job finishing at its plant. This uniting of two old established firms is not an example of Mr. Pinnell's idea in its entirety but is a straw which shows which way the wind is blowing. Similarly, the organization in recent years of the National Fabric & Finishing Co., which took over the Lowell Bleachery Co., the Columbia Textile Co., and several companies which are converters of shoe fabrics and also handle supplies for the shoe trade—and which later purchased the drapery business of Elms & Sellon Inc.—is still another example of this tendency.

A much broader and more far-reaching change in this direction is anticipated by the far-seeing factors in the converting field. They recognize the possibility that converters might become, for example, the styling and merchandising departments of large groups of mills. They believe that only in some movement toward integration is there hope for a permanently profitable basis.

Such developments do not take place over night. Nor can all existing firms profit by them. Many will have to fall by the wayside—and the sooner the better. Those who are able to adjust themselves to the new condition will gain rather than lose by the change. They have ahead of them the possibility of a far broader field of effort than ever before. But to those who cannot sense the need today for more intelligent and efficient merchandising of cotton goods, and who cannot revamp their organizations to fit this need, the answer to the question "What about the Converter?" will be a sad one.

Increasing Attention to Woolen Merchandising

Necessity for Cooperation to Assist in Relieving Market of Acknowledged Over-Production—Current Methods of Distribution Criticized as Uneconomic—Changes to New Things Necessary, Especially in Women's Wear Field—Need for Guiding Hand in Conduct of the Industry

By L. G. Salembier

MERCHANDISING with common sense must be reckoned as one of the potent remedies for existing maladies in the woolen and worsted field. The problem of over-production is admitted and it must be tackled but there is a feeling that the disease of over-production can be mitigated if not actually cured by the application of sound business sense to the question of merchandising. Far too little attention, it is believed, is paid to the matter of producing an over-supply of merchandise which may hang as an incubus over the market and which must be sold eventually, almost always at cut prices that may very likely be ruinous. This vicious cycle continues without any very apparent effort to correct conditions at the source.

Continuing Old Things

To take a concrete illustration of how over-production becomes almost the controlling factor in the wool goods industry, the case of two fabrics in the women's wear field may be mentioned. These are bolivias and sheens. The changes have been rung on these fabrics for a good many seasons and what is the result? They are made up into garments which the average consumer wears for a longer period than would be the case if something new were brought out. Women, and especially the flapper type, are keen for novelties but if a staple fabric continues season after season to be the style they will refurbish their old garments, put a fur collar or cuffs on to hide possible wear and still be in style. On the other hand if something distinctly different were brought out the change would be made because it would be regarded as necessary in order to be "in the swim." The manufacturer, cutter and retailer would benefit by the change and the consumer would be more satisfied.

Effect of Inertia

The result of continuing fabrics of this kind year after year is possibly not appreciated by many in the trade but the result can be easily traced. If because of salesmen's representations that certain staple lines are to continue the big thing in the market, buyers place orders for more than can be used there comes a time when the surplus that is not made up into dresses may be sold at a reduction to others in the trade who possibly will bring the same fabric out in coats. The consequence is that a market for other materials that would be adaptable for this division of the cutting-up trade is eliminated. On the other hand, it may very reasonably happen that sellers themselves, for one reason or another, usually because they need the money or are pressed by their selling agents to liquidate their stocks, offer the merchandise that has not been sold at cut rates. Immediately the whole market is demoralized and those who were not thinking of sacrificing their goods are compelled to meet the situation and name competitive prices that usually mean an absence of profits if not actual losses.

Should Hold Staples

Another angle of the situation is perhaps deserving of consideration. The dumping of merchandise by the selling agent is often unnecessary, particularly in staples or semi-staples. In many instances demoralization in the entire market could be avoided if on such fabrics as bolivias, for which there is always a certain call, the manufacturer who could afford to hold his goods would not become panicky but simply carry them in stock to await a renewed demand, showing them next season in his line and in all probability being able to dispose of them at full prices instead of at heart-breaking reductions. It is not only the small mill which is guilty in this respect, for it is claimed that some of the largest factors in the business very frequently put the knife into merchandise that might be held and sold eventually without deleterious effect upon the market. This all leads to the general conclusion that if goods were merchandised properly there would not be the losses which have been so much in evidence during the last two or three years. If there were a general determination to sell nothing unless at a profit it would be possible, in the belief of leading authorities in the industry, to market as big a volume of goods as ever, without being confronted with the necessity of price reductions that eliminate and overbalance any possibilities of profit. In spite of the incursions of silk and fur in women's wear, there is a feeling that the total yardage consumed is almost as great as ever, due to the increasing population and the capacity of the consumer. But it is coming to be felt more and more that unless the woolen and worsted selling trade do not bestir themselves and adopt more up-to-date methods in the merchandising of the product for which they are responsible that these other trades, including even cotton goods, will gain a foot-hold in the apparel industry that it will be almost impossible to dislodge.

Remedies for Over-Production

Too much haphazard work is done by mills in the wool goods industry today to give any assurance of permanance to their success. Lines of merchandise are developed for no particular reason except the possible hunch that they may meet with demand. It is possible that the idea may be given by a buyer who contends that he can use a good quantity of a certain type of merchandise. Without any confirmation from the general trade or without any consultation with others the manufacturer or the selling agent directs that these goods be made up. Possibly they would sell but there is no certainty of it and the whole process is haphazard in the extreme. Too much waste goes into the manufacture of numerous blankets that never see the light of day as far as the trade is concerned. More care in styling and more knowledge of the trade's demands would effect a large saving in this respect. The number of blankets could be cut down very materially, with a big saving to the manufacturer.

A good many mills enter blanket orders as though details were specified. For instance, they accept orders in the gray for 100 pieces or more with only a few pieces detailed and in most cases these are put in works. In the aggregate they amount to a good many thousands of pieces. It very often happens that a large part of the

blanket orders are never specified, which simply adds to the general overproduction and intensifies the merchandising problem. If this practice were done away with it would mark a distinct step in advance. Mills should count upon and put in works only such orders as they have actually specified.

Often orders for quantities are booked somewhat in the following manner: The selling agent or head salesman of a concern goes to a large cutter, whom we will call Mr. A, and sells him 2,000 pieces of a particular fabric. The next customer he calls on, Mr. B, is told of the sale to Mr. A. Mr. B being a friend of Mr. A, calls up the latter and he is told that he thinks so well of the cloth that he has bought 2,000 pieces. Mr. B immediately says "put me down too for a thousand pieces." This process goes on all down the line but unfortunately does not end there. Mills who have booked a reasonable business will often anticipate a much larger quantity owing to the large number of customers they have on their books. Mills who are not so successful tell their selling agent that they must have business and the reply is usually somewhat as follows: "Mill so and so has sold 30,000 pieces and Mill so and so is sold up on sheens. We cannot go wrong if you put in 500 or 1,000 pieces, etc., etc." The goods are put in works with the feeling that the fabric in question is the safest thing to give the mill to keep them running, whereas as a matter of fact they have no assurance that orders will be placed for the goods they advise making.

Over-Production Illustrations

As an illustration of how a change in demand may be productive of surplus that was not originally appreciated, the case of sheens may be again mentioned. Dresses made of this fabric with plaid combinations, were produced in a large way by dress manufacturers last fall. After the run on these garments was over a great many carried over large quantities of sheen. The weight was exactly the same as that which various mills were selling to the coat trade for the following spring. It was therefore possible for the dress manufacturer to sell his surplus either to coat houses or to jobbers. This supply was not calculated on by the manufacturer and acted as a barrier to further business with the coat trade. These various surpluses, accounted for in one way or another, aggregate a surprisingly large total.

The practice of offering a bonus or an extra discount to a customer at the end of the year, based on the volume of purchases, seems most uneconomic for the reason that it induces the buyer whose account is to be credited to buy goods in excess of what he needs. If he cannot use these goods he will either sell them at cost or below cost, if it is to his interest to do so. This makes for demoralization and cuts the ground from under the manufacturer himself as it destroys the possibilities of a potential market.

Leading buyers are always glad and even anxious to cooperate with mill men in the development of styles that will be large sellers. Too little cooperation with the trade in this respect is a lack from which it would seem the industry is suffering. But cooperation could go even further, in the opinion of those who have made a study of the subject, and there might with very great possible benefit to all concerned be a species of cooperation among selling agents themselves. Of course this would mean an elimination of the jealousies and misunderstandings that exist today between competitors. But if certain leading houses could get together, possibly with certain leading buyers, it is believed that they could unite on types of merchandise that could be put over as style leaders because they were shown extensively by those who were recognized authorities in the business. Probably little exception will be taken to the statement that there is less cooperation of a practical nature in the woolen and worsted selling trade than in any other industrial activity in this country. There is no telling what a change in the attitude of sellers in this respect could accomplish but many believe it would be worth a serious trial to demonstrate its feasibility.

A Concrete Illustration

To revert again to the women's wear trade, an illustration may be cited of the possibility of developing demand for a fabric that appeared dead as far as buyers were concerned. The fabric in point was a black Kasha. Owing to the wide-spread propaganda for Rodier Kasha it was apparent last fall that this fabric had possibilities. In black it did not seem to have the appearance of a stylish cloth for spring. However with white embroideries and trimmings of white fur a very sporty garment was produced when made up into coat models. The result was that demand based on these models materialized and at the present writing Kasha is one of the scarcest things in the market.

If attractive models are produced and fabrics are rightly distributed by leaders in the cloak and suit trade a demand can very often be fostered. It is generally appreciated that buyers in other markets follow the lead of acknowledged authorities, all having their eye on the style trend in Paris. There are usually a sufficient number of possibilities that may be developed in any season if properly engineered with cooperative effort to make a success at profitable figures.

Need for Guidance

In connection with the subject of cooperation, many in the trade feel that the development of an organization which shall have under its jurisdiction problems of manufacturing and merchandising, such as the Wool Council, is a prime necessity. The failure to date of the Wool Council to function has been a matter not only of regret but of concern to many who feel that other divisions of the industry are approaching their problems in a scientific and progressive way and are getting advantages therefrom which the woolen and worsted industry is failing to grasp. It is not intended to discuss the possibilities of benefit to the industry of such an organization except in the matter of cooperation. If anything can be done by the development of such a body, in which could be united the best efforts of leaders in the industry, it is believed the results would be most fruitful.

The trouble with the wool manufacturing and distributing trade seems to be that it never gets quite sick enough to necessitate drastic remedial measures. In times of depression the subject of remedies for existing conditions are uppermost in the minds of the industry, but let even a slight improvement be noted and apparently all thought of measures for correcting abuses and constructive plans for the development of the industry are immediately put to one side and everybody becomes so engrossed with his own affairs that the general health and prosperity of the industry is forgotten for the time being. This is the case with the wool goods industry today. There is a distinct undercurrent of better feeling. With evidence of greater stabilization in raw material, the possibilities of radical fluctuations and depreciation on merchandise are not subjects for the earnest consideration that were given them a short time ago. Therefore the objects and purposes underlying the proposed Wool Council apparently cannot be revived with any hope of success. Perhaps it is too much to say that the Wool Council has been relegated indefinitely and that nothing will ever be done about it. There are those who continue to believe that something of this kind will be formed eventually but the opinion of the majority is that it is possible to worry along with the prospect of things becoming better and with the prospect of better business there is little reason for expending time and effort on something that is more or less intangible and on which there appears to be no general consensus of opinion as to its universal application. It is just such an attitude that has brought the industry into the condition which it occupies today and many feel that no lasting improvement can be witnessed unless an industry-wide and honest attempt is made to regulate and systematize the merchandising end of the business.

Possible Merchandising Changes

In the merchandising of woolens and worsteds there does not seem to be the possibility of radical changes in the outlets for merchandise and the methods of sale as in the cotton goods and knit goods fields. In the latter the struggle is between those who continue to market their product through the jobbing distributor and those who go direct to the retailer, cutting out the intermediate factor. Such a development is not feasible in the merchandising of wool mills' products. And yet there is a feeling in certain quarters that the trade is bound to witness an evolution of a certain character that will approximate the trend in quarters other than this industry to go direct to the retailer. This is felt consists in the possibility of establishing outlets more or less controlled by the manufacturer or the selling house. This is being done in a quiet way in both men's wear and women's wear at the present time with a varying measure of success. It is possible a larger volume of business is done through such channels than is generally known, but it is certainly by no means a universal practice and it will be a long time before the plan receives the consideration of any large number, if it is ever to become a factor in distribution. In the distributing of wool goods the same problem of over-capacity is to be seen as in textile manufacture of any character. There is no doubt that the number of clothing, cloak and suit houses could be cut very materially without interfering with the retailer's or consumer's necessities. In other words, probably a comparatively small proportion of the cutting trade would have sufficient capacity to supply the country's demands, just as is the case a varying measure of success. It is claimed that in the shoe industry there is a total of over 1600 factories and that 240 of these have sufficient capacity to take care of all the demand in the country. The control of outlets, should it show any material development, would have a tendency to reduce this number, to the undoubted advantage of all concerned. But it is believed that even with the existing methods of distribution much can be done to alleviate troubles inherent in the market if there is a concerted effort on the part of those who are vitally interested to bring about a more healthy and sensible economic condition.

Volume of Business Should Be Good

By George H. Hodgson

Vice-President and General Manager, The Cleveland (O.) Worsted Mills Co.

We have been very busy up to this point and are preparing rapidly for next season. It is hard for me to predict what the next six months will show until we have a chance to see our customers with the new line. My own personal opinion is that it should be good as far as volume is concerned because all statements which we are receiving from our customers showing the wind-up of 1926 indicate lower stocks still, in their possession.

Anticipates Relatively Good Business

By A. F. Bemis

The general business situation in this country looks healthy for the time being. The plentiful supply of raw cotton and present satisfactory prices therefor should serve as a material stimulus to the cotton manufacturing industry. I anticipate a relatively good business around present price levels with no substantial advances, though with hardening tendencies during the next few months.

Jute and Its Niche

Indian Natives Engaged in Sorting Raw Jute Fiber After It Is Brought from the Interior to Calcutta

Loading Baled Jute Fiber on Trains at Warehouses in Calcutta. Hand power is generally used

Evening Out Jute Fibers by Hand Preparatory to Starting the Material Through Calcutta Mills

Mangling the Jute by Machine, a Preparatory Process as Done at a Large Calcutta Mill

Photos by Henry Miller, Washington, D. C.

JUTE and its products have made an important place for themselves in world trade largely because unapproached by other materials of similar characteristics at anywhere near so low a price. Certain particular uses require jute goods for their own peculiar qualities, and users of this class would pay almost any price to get them. The bulk use however is for bagging and baling, where other fabrics would add an appreciably greater cost and thus prevent many economies, particularly in the agricultural field.

The jute fiber itself is coarse and brittle, but may be of considerable length and strength. The plant resembles a reed and grows best in a hot, moist climate with a fair amount of rain. Nearly all of the jute used in the world is grown in British India, chiefly in alluvial soils at the deltas of rivers. The ground is plowed several times in preparation and the seed is generally sown in February. The plant flowers from June to August and is harvested in September. It attains a maximum height of 18 to 20 ft. when mature and ready to be cut down. It is grown upon land for which no other suitable crops are now known.

How Fiber Is Obtained

The desired fiber in the jute plant is inside the stalk and is surrounded with bark and pith. The cut stalks are put in shallow tanks for a retting process until the outer bark becomes quite soft. This is then hacked away from the fiber, and the latter is gathered and spread out in drying yards. A certain amount of sorting takes place up country, according to color, length and strength. The fiber is then bundled and tied into rough bales and sent down to Calcutta. Here a large part of it goes to the Indian jute mills along the Hoogly River. Another part of it, comprising chiefly the better grades, is more carefully sorted and baled into 400 lb. bales which are exported to jute manufacturing countries, probably a majority finding its way to Dundee, Scotland. Some is imported into the United States going to such jute spinners as Ludlow, Chelsea, Dolphin and Allentown, where it is spun for the purpose of making twine, carpet yarns, cotton baling, etc.

That part of the jute crop which remains in Calcutta is spun and woven in the 40 odd mills in the Calcutta district manned with native operatives. There it becomes the common burlap or gunny sacking of the world's trade. Calcutta also makes up a certain part of its product into bags which are used in Australia for wool and in Cuba for sugar. The greater part, however, is exported in the piece, as so much yardage. This is the character of the greater part of the burlap imports into the United States and the material is made up in this country into bags suitable for such commodities as feed, flour, fertilizer, etc., or used in lengths as covering for baled materials.

How Handled in Dundee

The jute which is shipped to Dundee, which center is probably the second largest jute industrial center in the world, starts its manufacturing process by going through a machine called a bale opener or "crusher." This is necessary because of the hard and matted condition in which it is received, being compressed before shipment. Scotchmen in New York tell of warehouse fires in Dundee where, though the damage from fire was moderate, the water poured upon the stored bales had caused them to expand to the extent of actually bursting the building apart, buckling the floors and spreading the walls.

After being taken from the bale, the jute goes through a machine called a softener, which is equipped with about 60 pairs of fluted rollers fed by traveling lattices. In its progress through this machine it receives a sprinkling of oil and water from perforated pipes, to render it more easily handled in succeeding processes. It is usually allowed to rest for 24 hours for the oil and water to permeate the fiber. The fish oil used for most of the Dundee finishes, gives a characteristic odor which is to be avoided in such uses as sugar bags but which for most of the uses to which Dundee goods are put, is not of consequence.

The raw material is next put on the breaker cards to be teased up, cleaned and thoroughly mixed for output in sliver form. This sliver goes to the finisher cards and from them to the drawing frames where the fibers are further straightened and equalized. In the final process of roving, there is no doubling of the sliver, but each is drawn out about eight times its own length and given a slight amount of twist so that it may safely be handled and wound upon the roving bobbin. On the spinning frame the yarn is usually given a hard twist when intended for the warp, and a soft twist when intended for the filling. The yarn which is to be used for warps goes to a spooling machine, and that which is to be used for filling goes to the cop winding machines. The warp yarn is dressed and starched, and then wound on a beam. These are later set up in a loom in the customary way and the weaving proceeds.

When woven the fabric is inspected and defects which may be repaired are taken care of. The fabric is then calendered or mangled in accordance with the finish required and then rolled or packed in bales for shipment.

Variety of Products

The chief products of the Dundee industry and also of scattered jute mills on the continent of Europe, are linoleum base burlap, wall coverings, brattice cloth used in mines, carpets and rugs, twines, ropes, yarns and innumerable other things.

The higher grades of jute are clas-

in the Textile Trade

sified as such on the basis of their color, the brighter and higher color being the better, and of the length and strength of the fibers. The matter of fineness is not given consideration for the fiber is generally much the same in this regard, and little attempt is made to spin fine yarns from it. It is stated on good authority that mills rarely spin finer than 6-pound yarn. This weight is figured on the weight of 14,400 yards. An 8-pound cop is used in the making of 7½ to 9 ounce burlap which are about the lightest yarns and fabrics made in Calcutta.

The Calcutta product ranges from 32 to 48 inches in width, this range covering 90% of the present output, and in weight from 7½ to 12 ounces. The weight is figured on the weight of 36 inches of fabric 40 inches wide. This 40-inch width is the standard and the 7½ fabric is based on that width, being the same fabric whether the goods are 32 inches or 48 inches wide.

Linoleum Base Burlap

The linoleum base burlap is probably the most important of the jute materials made at Dundee. For this purpose the widths range up to 150 inches. One Scotch mill put in a 300 inch loom some years ago, though it is not known to have been used to any extent recently. It is understood that one of the ideas behind this immense loom was the weaving of eight strips of 36 inch goods with patent selvage between each, but as the practice did not spread, the actual savings were probably not in line with the theoretical savings.

Linoleum base is a particular use for burlap, for which it must be used no matter what the price. During the war when the wide burlap from Dundee was scarcely obtainable at any price, American linoleum makers were hard put to it for a fabric base. Exhaustive experiments were made with cotton and other fibers without success. The linseed oil and cork dust paste would not adhere to a cotton fabric the way it adheres to burlap. Some goods were finished with the cotton base and they cockled and warped to such an extent as to be utterly useless. In the emergency American linoleum makers put in looms, bought jute yarns anywhere they could and wove their own base goods. One linoleum plant put in 76 looms for that purpose and then after the war junked them when Dundee goods were again available.

At the present time linoleum makers feel that they should be benefiting from the large jute crop of 1926 in lower prices but in fact the volume of this jute crop has been on the lower grades so that while the higher grades such as are used in linoleum base goods have remained about the same price, the spread between them and the lower sorts has widened. Similar spreads have occurred in cotton between high and low grades, when large crops were particularly long on the lower sorts.

Cotton and Jute Crops Balance

Students of the situation have commented upon the good fortune of both the jute and the cotton industries that their bumper crops came in the same year. Approximately the normal relation may consequently be expected to remain between the two fibers and the fabrics made from them. There will therefore be no abnormalities to be corrected when the bumper crops pass into history.

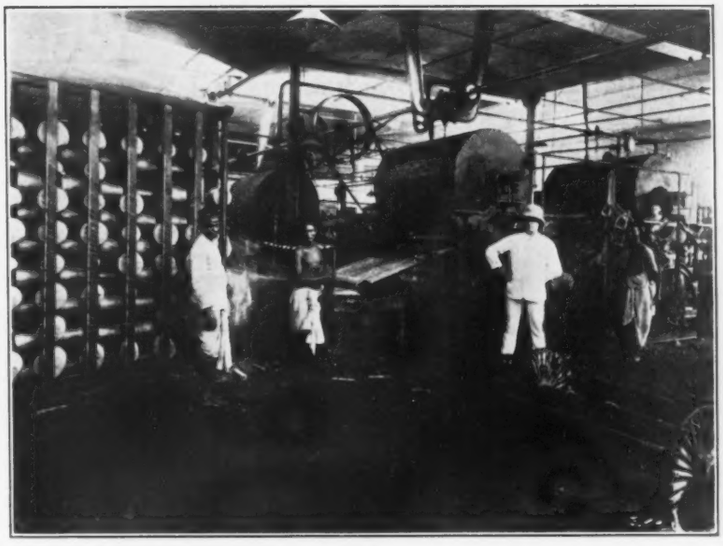
If it had not been for 12c cotton, it is strongly believed by prominent importers that burlap in the field of coated textiles, imitation leathers, etc., bagging and other uses, would have expanded to the detriment of cotton goods. Authorities state that makers of imitation leather give preference to cotton up to about 150% over the price of a jute fabric which might be put to the same use. Where price is very much a factor the jute goods begin to enter as a substitution.

For feed bag use burlap has characteristics which would be possible in cotton only in a much finer, more closely woven, heavier and more expensive fabric. It is pointed out that a fairly light burlap will carry feed without loss of 1% in transit because of the fact that the fibers stand out from the yarn, mat together and close up the interstices which, with cotton, would have to be closed up by a much closer weaving of the constituent yarns. A similar advantage of burlap makes it particularly adapted for the economical containing and transportation of fertilizer. Some fertilizers would have a corrosive effect upon cotton, eating through the fabric of the bag before arrival at destination, while jute carries it securely without difficulty.

No great amount of jute yarn is imported as there is a small jute spinning industry in this country which has been protected by a tariff. Domestic spinning is therefore in the great majority in twine and in carpet yarns. The fact that raw jute is imported into this country at all, is largely because of this industry. Highly specialized types of yarn for which there are certain small uses are still imported from abroad, where the variety of spinning is greater than in the domestic trade.

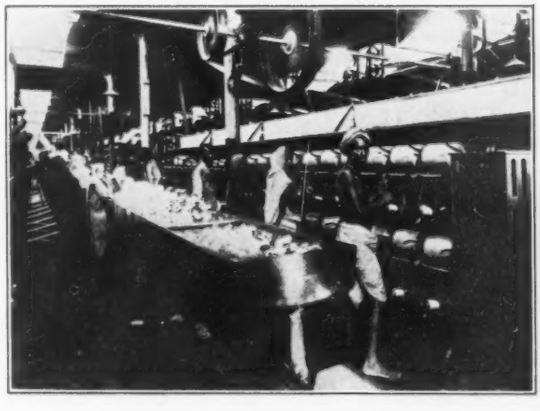
When recently asked that the Post Office Department hold up the award of 1,500,000 pounds of jute twine pending investigation of the possibilities of substituting cotton twine, Postmaster General New explained the position of the department as follows: An advertisement was made for twine, including both cotton and jute. The bids indicated jute twine might be purchased at 12.5c per pound and cotton twine at 20.5c per pound. Under the law, the department must purchase from the lowest responsible

(*Continued on page 312*)



Preparing Jute Warps on Modern Machinery in One of Calcutta's Large Jute Mills

One of the Many Jute Mills on the Hoogly River Near Calcutta, India



Winding Jute Yarn in One of India's Large Jute Mills Near Calcutta

Native Women Making Burlap Bags. Part of Calcutta's Output Is Made Up Before Export

Photos by Henry Miller, Washington, D. C.

North-to-South Trek of Cotton Mills

Survey of Northern Cotton Spinning and Weaving Machinery Moved to Cotton Growing States Since 1921—Totals Smaller Than Usual Estimates, But Do Not Include Much Second-Hand Machinery Sold Indirectly—Not a Measure of the Actual Loss to North

By Henry G. Lord

BECAUSE of the very general public interest aroused in the recent increase in the transfer of northern cotton spinning and weaving mills and machinery to cotton growing states, and because of the wide variation in estimates of the amount of machinery involved, TEXTILE WORLD has undertaken a survey of northern mills known to have moved the whole or part of their machinery South within the last five years. The results of this survey, which are tabulated herewith are believed to be substantially complete, and certainly are sufficiently close approximations to show the scope of the movement up to Jan. 1, 1927. They show that 30 cotton spinning and weaving mills located in seven northern states have moved to cotton growing states within the last five years a total of 577,836 spindles and 4,807 looms, and that, inclusive of machinery added to southern branches of certain of these mills, there has been a total movement South of 629,148, spindles and 5,745 looms. It is a somewhat peculiar co-incidence that seven southern states profited by this movement from seven northern states.

The table showing northern cotton spinning machinery moved to southern states since 1921, and which also includes new machinery installed by southern branches of northern mills, shows these figures in detail as well as the states moved to when this information was obtainable, and also gives further details regarding the character of transfers involved. It will be noted that very few of the mills listed as having transferred machinery South have gone out of business, and it should be clearly understood that this survey does not include northern cotton mills that have closed all or part of their plants, or have gone out of business, unless some of their machinery was transferred South.

In addition to these units there have been many smaller lots of machinery purchased by southern manufacturers from northern mills to add to equipment. At least 100,000 spindles and 1500 to 2000 looms and much miscellaneous machinery have been transferred in the past five years in odd lots, bringing the total to approximately 750,000 spindles and 7500 looms.

The list does not include several northern mills that have announced their intention to transfer all or a part of their machinery South, but have not actually undertaken the transfer. Among the latter might be mentioned the Chicopee Mfg. Co., Chicopee Falls, Mass., and the Connecticut Mills Co., Danielson, Conn.

Bearing these facts in mind it will be seen that the survey does not disclose the actual loss to the North in active cotton spinning and weaving equipment that has been a result of keen southern competition, but merely shows the gain to the South that has resulted from actual transfers of machinery during the period under review. Neither does it show the exact gain in southern spinning and weaving capacity, for the latter is made up of machinery times hours operated, and as machinery in the cotton growing states is operated on the average 50% more hours per week than in the northern states there has been that additional gain in potential capacity.

The list does not include a consider-

(*Continued on page 269*)

Northern Cotton Spinning and Weaving Machinery Moved to Southern States since 1921—(Also Includes New Machinery Installed by These Mills in Southern Plants)

Mills	Moved to or sold South		Installed new machinery South		Total South		State moved to	Explanatory notes
	Spindles	Looms	Spindles	Looms	Spindles	Looms		
Connecticut:								
Manhassett Mfg. Co., Putnam	.....	160	.....	.....	.....	160	Ga.	Out of business. Part of machinery sold South.
Maine:								
Pepperell Mfg. Co., Biddeford	24,000	600	.....	.....	24,000	600	Ala.	Machinery on coarsest counts moved to new plant at Opelika.
Massachusetts:								
American Printing Co., Fall River	88,648	1,958	.....	.....	88,648	1,958	Tenn.	Part of machinery moved to new plant at Kingsport.
Pacific Mills, Lawrence	34,000	.....	16,000	564	50,000	564	S. C.	Part of machinery moved to new plant at Lyman.
Appleton Co., Lowell	30,000	.....	.....	.....	30,000	.....	S. C.	Part of machinery moved to new plant at Anderson.
Barber Mfg. Co., Lowell	.....	8	.....	.....	.....	8	N. C.	Part of machinery moved to new plant at Charlotte.
Cordis Mills, Millbury	12,000	.....	.....	.....	12,000	.....	.....	Out of business and best of machinery sold to various southern mills.
Beacon Mfg. Co., New Bedford	5,000	260	.....	.....	5,000	260	N. C.	Part of machinery moved to new plant at Swannanoa.
Fairhaven Mills, New Bedford	25,200	.....	.....	.....	25,200	.....	Texas	Part of machinery sold to Worth Mills and others South.
New England Southern Mills, Lowell	35,568	121	.....	.....	35,568	121	Ga.	Part of machinery moved to Stark Mills, Hogansville.
Nobska Spinning Co., Taunton	14,000	.....	.....	.....	14,000	.....	Texas	Machinery moved to Galvez Mills, Galveston.
Boston Mfg. Co., Waltham	15,000	.....	.....	.....	15,000	.....	.....	Surplus coarse count machinery sold South (66,000 spindles and 1,800 looms operated at Waltham, Mass.).
J. S. Boyd Co., Williamstown	.....	50	.....	270	.....	320	Tenn.	Looms moved to new weaving plant at Johnson City.
Essex Cotton Mills, Newburyport	24,120	122	.....	.....	24,120	122	Ala.	Out of business; machinery sold to Dwight Mfg. Co. and moved to latter's Alabama City plant.
Thorndike Co., Thorndike	20,000	.....	.....	.....	20,000	.....	.....	Thorndike, Mass., plant closed. Part of machinery sold South; balance junked.
Carl Stohn, Inc., Hyde Park	.....	.....	.....	84	.....	84	N. C.	Part of machinery moved to new Charlotte plant.
Whitinsville Cotton Mills / Saunders Cotton Mills, Saundersville	17,000	.....	.....	.....	17,000	.....	.....	Out of business. Part of machinery sold South and balance junked.
Lawrence Duck Co., Lawrence	30,000	300	.....	.....	30,000	300	Ala.	Machinery moved to Lincoln Mills, Huntsville.
Rhode Island:								
Crompton Co., Crompton	12,500	500	.....	.....	12,500	500	Ga.	Transferred part of machinery to mill in Griffin.
Lonsdale Co., Lonsdale	20,000	500	.....	.....	20,000	500	S. C.	Bought plant at Seneca and moved coarse count machinery thereto.
Manville-Jenckes Co., Pawtucket	40,000	.....	.....	.....	40,000	.....	N. C.	Bought plants at Gastonia and High Shoals and moved part of machinery thereto.
New Jersey:								
Brighton Mills, Passaic	25,000	48	.....	.....	25,000	48	Ga.	Erected new plant at Shannon and moved large part of Passaic machinery to it.
Essex Cotton Mills, Passaic	35,000	.....	.....	.....	35,000	.....	Ga.	Out of business. Part of machinery sold to Goodyear Clearwater Mills, Cedartown.
Morris & Co., Groveville	9,000	40	.....	.....	9,000	40	Ark.	Transferred spinning and looms to new plant in Morrillton.
New York:								
John K. Stewart & Sons, Amsterdam	16,000	.....	.....	.....	16,000	.....	Ark.	Moved spinning to new mill at Pine Bluff.
Sauquoit Spinning Co., Capron	20,000	.....	.....	.....	20,000	.....	Ala.	Moved part of their machinery to their mill in Gadsden.
Skenandoa Cotton Co., Utica	7,800	.....	.....	.....	7,800	.....	Ala.	Moved part of their machinery to their Lafayette (Ga.) Cotton Mills.
American Thread Co., New York City	.....	.....	30,312	.....	30,312	.....	Ga.	New plant at Dalton.
Pennsylvania:								
Thomas Henry & Sons, Inc., Philadelphia	18,000	140	5,000	20	23,000	160	Tenn.	Moved to new plant at Nashville.
Total	577,836	4,807	51,312	938	629,148	5,745		

Reorganizing Textile Mill Power Plants

Examples of Work That Has Been Done—Influence of Draft on Boiler Plant Revamping—Changing From Oil to Coal Fuel and Place of Pulverized Coal—Utilization of Waste Heat in Form of Exhaust Steam and Condensing Water—Tests and Reports

By D. D. Eames
Of Lockwood, Greene & Co., Inc.

Improvements in manufacturing buildings and machinery may have to wait until money is conveniently available to pay for them. On the other hand, power plant improvements are a necessity when boilers and prime movers are worn out or outgrown. This article discusses some of the problems that textile manufacturers will have to meet within the next few years, and outlines methods that can be used in solving them. It also takes up the subject of economies which may be worked out at the same time.

THE costs for heat, light, and power in the textile industry represent a fairly large item in the total cost of finished goods. The cost per pound of cloth for these items in the case of the coarser gray cotton goods made in New England is not less than 2 cents per pound, and in the case of mills making finer goods, or those mills having colored products, the cost for the items mentioned may reach a total of 4 or 5c per pound.

All expense for these items is incurred in the power plant and in the steam and power distribution systems; consequently it is in these departments that economies must be made if the corresponding costs in the finished product are to be reduced. In addition to the economy phase of this question there are the changes required to keep the plants in operation as they become worn out or outgrown. There are many power plants which have been getting along for several years with little in the way of maintenance and which now find themselves obliged to go ahead with extensive changes.

Two Cases of Reorganization

In two recent instances mills have been forced into power plant work by the action of insurance companies in condemning boilers. One of the mills in question had 24 out of 36 boilers condemned. The old boilers had been operating with single retort forced draft stokers and small steel stacks. The old boiler house was wide and high and the problem was solved by the installation of two 600 H.P. water tube boilers with 7 retort underfed stokers, the new boilers occupying the space of 12 of the old boilers. The old stacks were insufficient in size and height to give the draft needed for the new boilers, and a new stack 200 ft. high and large enough for a total of 4 boilers was built. The boiler plant question for this mill is thus settled for a long time to come. When the remaining 12 small boilers are worn out, a third large boiler will be installed with space still available in the building for two more units if the load grows to such size.

In the other instance the mill had two boiler plants, one generating electric power and the other, nearer to the mills, generating steam for heating and processes. It was this latter plant which was shut down by the insurance company. There being sufficient spare boiler capacity at the generating station it was decided to transfer the load of the old plant to this station, involving the installation of a high pressure steam line about 1,200 ft. long to transmit about 2,000 boiler H.P., and connecting through reducing pressure valves to one of the supply mains of the old system.

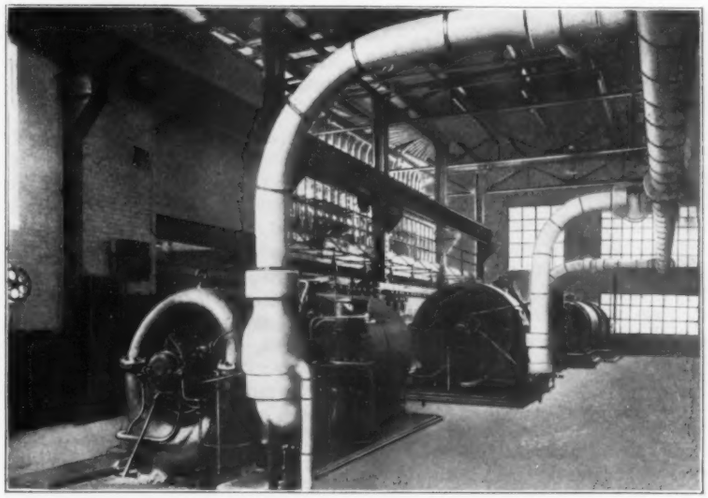
The new supply line runs partly outdoors on an overhead pole system, partly through an existing tunnel, partly through mill storehouses, and partly underground in the conduit, crossing a six-track railroad system and three streets. Condensate from the mill system drains by gravity to a return tank in the old boiler house, just as originally, and one of the old boiler feed pumps, acting as a return pump, discharges all the hot water back to the central boiler plant through a new return line which parallels the steam line.

This system was much less expensive in first cost than the installation of new boilers in the old plant and has affected operating economies by the concentration of steam generation in one plant and a reduction in labor. Such a problem as this requires great care in design and installation to insure reliability, but once properly installed there should be no occasion for shutting off the steam year in and year out.

Influence of Draft

Many mill power plants need reorganizing to improve draft conditions. Draft is the life of the boiler plant. Insufficient draft limits boiler capacity, reduces efficiency and in installations using forced draft, will cause pressure in the furnace which will surely bring furnace and stoker failure. A good draft means that the boilers can be operated at overloads and at good efficiency. To build a new chimney will in many cases give the same result as the installation of additional boilers and at much less expense. In a recent case of this kind a mill was barely able with 12 boilers to carry its load. A new stack was built and 8 boilers were then able to carry the load without difficulty. In another instance a large boiler house was dependent on an induced draft fan. The boilers at the far end of the line in particular were much handicapped. A new stack was built, the smoke flue remodeled and the fan discontinued, resulting in a great improvement both in the capacity and the efficiency of the plant.

There are two factors in the design of a stack. First it must be high enough to give the intensity of draft to overcome the draft losses of the fuel bed, boilers and breeching. These draft losses vary for the different types of boiler and for every different arrangement of smoke flue, and they increase rapidly as the boilers are forced to high ratings. The second requirement of a stack is that it be large enough in cross sectional area to carry off the volume of gases delivered to it. In other words, the height of a stack is determined by the draft losses of the plant, and the diameter by the number of boilers.



Power Plant of Riverside & Dan River Cotton Mills, Riverside Division, Reorganized and Enlarged by Addition of Two 3000-KW. Turbines

Present Status of Oil Fuel

A good many mills which have been burning oil are facing a difficult problem because of the high price of oil. There is no question about the desirability of fuel oil for industrial plants. Oil firing is simple, reliable and clean; it saves labor and permits high boiler rating. During the war and for some time after, the price of oil was low and of coal relatively high. Now the conditions are largely reversed and oil is for many plants a very expensive fuel. The problem in such cases is how to change back to coal with the least expense commensurate with a satisfactory result. The equipment to be chosen will depend of course on the size of the plant and its local conditions.

There are some instances of textile plants which have been burning oil for a number of years and now find their load has increased to such a point that they are not able to change back to coal without a much more drastic remodeling of their boiler plants than the simple installation of coal burning equipment under the old boilers. These plants have a very real problem, calling for the most complete analysis to arrive at an answer which will insure the lowest cost of steam; investment, fuel and attendance charges all being considered.

One plant which is facing a situation like this was designed originally for hand firing but was changed over to oil when oil fuel first began to come on the market. Its load has now increased to such an extent that it would be very difficult, if not impossible, to meet the demand for steam with coal fuel except by the installation of stokers or pulverized coal, and this would be extremely difficult and expensive on account of the design of the plant. This is doubtless the case in a number of textile plants and a correct solution can only be arrived at by a very thorough knowledge and study of all the conditions involved.

Pulverized Coal

For the larger stations stokers and pulverized coal will be considered. Nothing in recent years has aroused so much interest in power plant circles as the development of pulverized coal, and it seems fair to state that the field is ripe for a wide application of this

fuel. Its advantages and limitations should, therefore, be well understood as well as the principal requirements of a successful installation.

Pulverized coal is the most modern method of firing boilers. Pulverized fuel for an industrial plant can usually be installed at a lower first cost than stokers. Roughly speaking, coal handling and bunker will be the same for stokers or pulverizers. The stokers themselves and the pulverizers offset one another as to cost. Ash handling equipment and tunnel are not required in as elaborate form for pulverized coal as for stokers and it is in these items that the principal saving can be made. The maintenance of a correctly designed and installed pulverized fuel system should not be greater than on a stoker plant and will probably be smaller.

There are two broad divisions to the types of fuel pulverizing apparatus. In the central or storage system the coal is first crushed, then dried, pulverized and blown into storage bins, one of which is provided for each boiler. A system of motor-driven feeders, requiring also compressed air, deliver the coal from the bins to the burners as required by the load on the boiler. In the unit system the coal is first crushed, then pulverized and blown directly into the furnace. Usually there is one pulverizing mill for each boiler, but in the case of very large boilers two or even three units have been used.

Each of these systems has its advantages and disadvantages and each has a field to which it is particularly adapted. The decision for one or the other of these systems for any particular plant should be made only with full knowledge of all the local conditions.

A pulverized fuel installation should not be attempted unless correct conditions can be obtained. Through ignorance or over-enthusiasm many installations have been made under conditions far from correct and the poor results have worked a real and undeserved injury to the art. Correct conditions involve the size and shape of the furnace, the load characteristics, the number of boilers, the coal characteristics and other special features.

The larger part of trouble which has occurred with pulverized coal systems has been due to faulty furnace design and construction rather than to trouble with the pulverizers. Inspections of a number of pulverizing plants have shown pulverizers working to good satisfaction but the boiler settings almost a wreck. Consequently the greatest emphasis should be placed on correct furnace design.

A certain furnace volume based on the horsepower to be developed is essential if good efficiencies are to be obtained and excessive furnace maintenance avoided. At the same time the shape and dimensions of the furnace must be carefully chosen. Narrow furnaces are bad. Anything less than eight feet wide might occasion considerable refractory trouble. The depth front to back should be fifteen feet or more. These figures set certain limitations on the size and type of boiler to which pulverized coal may be successfully adapted; in fact the most important part of the furnace design is fixed when the boilers are selected because the boiler determines the length, width and height of the furnace.

The boilers for a good pulverized coal installation should be set singly and not in battery as battery walls will not stand up under the temperatures obtained in pulverized furnace installations. All boiler supporting steel should be entirely clear of the brick walls. Furnace floors should be air-cooled to protect the boiler foundations, prevent slagging of the ash, and furnish heated air to the pulverizer.

Some coals are hard to pulverize, others have low fusing ash or contain excessive inherent moisture. All these characteristics are unfavorable for pulverizing systems and if known to exist should be carefully considered when making up the design.

New Boiler Plant of Branch River Wool Combing Co., No. Smithfield, R. I.; 1,000 H.P. Capacity, Supplying Steam for Processes and Heating

Purchased Power

The reorganization of a textile power plant occasioned by the growth of the load or the obsolescence of the power plant often introduces the possibility of the use of purchased power. Purchased power frequently is more expensive than manufactured power. Its advantage lies not in the saving in cost of power but in releasing capital for productive use.

If power can be produced as a by-product of exhaust steam or warm water, or if a mill possesses a satisfactory power plant, there is, of course, no reason for considering the purchase of power. On the other hand, if the allowable pressure on the boilers is reduced below the point where it is profitable to run generators, the boilers may still be good for many years of service for heating and process work and the purchase of power will save the large expense necessary for their replacement.

Utilization of Waste Heat

There are several methods by which manufacturing costs may be substantially reduced in the wool industry. These methods have to do particularly with the utilization of waste heat. This heat may be in the form of exhaust steam or warm condensing water. Exhaust steam from back pressure turbines or steam extracted from a condensing turbine can be used to advantage in heating water, or for operating dryers and other machinery requiring low pressure steam. In most cases the demand for exhaust steam fluctuates. The ideal arrangement for furnishing steam under these circumstances is through a turbine which is relayed by some other source of power. In this case the electrical output of the back pressure turbine will fluctuate in accordance with the demand for exhaust steam, the turbine acting as a reducing pressure valve but delivering at the same time a substantial amount of power.

In some cases it is possible for a turbine in a mill to run in synchronism with purchased power, the turbine carrying just the right load to balance the demand for exhaust steam and the purchased power carrying the rest. By this means the maximum possible saving is realized and wasteful operation, at times when the steam and power loads are out of balance, is avoided.

Use of Condensing Water

It is better to use waste heat from the power plant in the form of condensing water than in the form of exhaust steam. This can, of course, only be done when the process requirements are satisfied by condensing water temperatures. The advantages of this arrangement over the use of the steam direct are that the heat can be transmitted at less cost and with no danger of handicapping the process, and at the same time there is no bad effect upon power plant economy. If the demand is intermittent and the condensing water is not always used, even then the power generating units are efficient, which is not the case with back pressure turbines.

In the case of worsted mills using a great quantity of water at about 115 degrees for wool scouring and washers, a supply of condensing water from the turbine is ideal, but only a few mills are taking advantage of it. In one instance a mill was operating condensing turbines discharging the warm condensing water into the river and then drawing cold water from the river and heating it in steam heaters for use in their wool scourers and washers. This was, of course, a direct waste of heat.

Tests and Reports

Reorganization of a mill power plant should be preceded by a comprehensive study of the situation. A report discussing plant operation, possible improvements, and methods of development is of great value at such a time. Efficiency tests of industrial power plants are disorganizing and expensive and seldom of any benefit. The best method of determining what is really needed is a study of conditions, the conclusions being based on observation and experience, rather than on testing and book knowledge.

Reorganization will seldom take the form of complete replacement of an old plant. It is not often that a new and modern power plant can save its overhead cost as compared with an old and inefficient plant which is still serviceable. In many cases the old plant can be reclaimed by suitable changes and additions and put into efficient condition without excessive expenditure of capital.

Outlook for Underwear Business Promising

By P. H. Hanes, Jr.
President, P. H. Hanes Knitting Co., Winston-Salem, N. C.

We consider the outlook for 1927 for the underwear business very promising; in fact more so than for the past several years. Underwear prices are lower than they have been for a number of years, and the confidence in same is being reflected by the orders that are being placed. If our information is correct, a very satisfactory business has been and is being booked by the various underwear mills whose prices have been announced.

It is generally conceded that the price of raw cotton is several cents a pound below the average cost of production, and our feeling is that this year will be no different from those in the past when similar conditions as to raw materials existed, when a very wholesome buying of underwear and other cotton products resulted therefrom.

Stocks of underwear, both wholesale and retail, inventoried by the merchants in various sections of the country on Jan. 1, were smaller, on the whole, than they have been for a number of years past; and as weather conditions govern the sale of seasonable products, it is reasonable to suppose that their stocks will be thoroughly cleaned out during the remainder of the winter season, thereby enabling the buyers to place orders for their future needs more freely.

Long Draft in Cotton Yarn Manufacturing

Success Depends Upon Better Control of the Shorter Fibers—New Drafting Elements Can Accomplish Actual Drawing from Card Sliver to Yarn With Fewer Processes, but Elimination Can Be Overdone—Two Procedures That May Be Adopted—Long-Draft Organizations

By E. E. Blake

An outstanding technical development of the last year was the adoption by many mills of long draft, or high draft, in cotton spinning. Of course drafts have been getting moderately higher with each passing decade as improvements were made in manufacturing practice and equipment. But comparatively recently we have seen innovations in drafting elements that made possible a long step forward, due to the better control provided for the short fiber. On account of his thorough knowledge of the subject and extensive studies in Europe and the United States, we asked Mr. E. E. Blake, of Saco-Lowell Shops, to discuss this development. In this article he shows what the problem of drafting consists of and what can be accomplished by the use of the long-draft method.

TO all familiar with the art of converting large masses of fibers, whether cotton, wool, or other material, into yarn, it is well known that subsequent to the preparatory cleaning and the carding process must come the reduction in the diameter and weight per unit length to the required fineness. To accomplish this the product of the carding machine is subjected to a series of attenuations. These attenuations are made by subjecting the material to a drawing out process, necessarily accomplished by several steps or stages.

A critical study of the activities of the drawing mechanisms, and of the fibers subjected to the drawing, reveals many interesting facts and further familiarity with these phenomena and factors has resulted in advances in the art of drawing. Manifestly, a complete advance in this art must consist of the production of a more uniform, more even and round, or "level," thread, and the arrival at this result with less cost. This has been done, but for the benefit of those interested and not wholly familiar with the subject, we offer a discussion of some of the factors, a reference to some of the efforts toward more efficient drafting, and an outline of the accomplishments. We have to deal with the material used, with the manufacturing equipment, the methods of handling, and with the product.

Fiber Variations

It is well known that fibers produced by nature vary greatly in characteristics, not merely one kind from another, such as the differences between cotton, wool, flax, silk, etc., but each kind varies to permit and to require classification. While developments in drafting these various fibres has proceeded somewhat, in this article we are particularly interested in handling cotton. We fairly promptly determine certain outstanding characteristics of the cotton fiber when we handle it in our manufacturing processes; nevertheless, a closer study is fruitful, and indeed our vision soon widens to the view of an indefinitely broadening opportunity in this study.

The writer realizes that many men are far more competent to discuss growing and various other phases of cotton; nevertheless, our work has brought us in sufficiently close contact with some of these phases to appreciate that there are avenues leading to important developments, through which we believe the economic results of a close cooperation, but on a broad scale, between the grower and the manufacturer of cotton, would be tremendous.

Doubtless the cotton farmers themselves vary in characteristics as much as or more than the cotton which they grow; some are more intelligent, more businesslike, more open minded, and more industrious than others. We expect the same is true of manufacturers or people in any walk of life. It is an illustration of the danger of making a general characterization. No doubt the average cotton farmer is more or less interested, some more than others, in the cost per dollar wages, production per unit of fertilizer supplied, yield per acre, increased yield with increased cultivation, soil, rotation of crops, and to the weather during cultivation and picking. The farmer is obliged to be a gambler. This may contain the joy or the sorrow of his vocation. He cannot be sure at the time of planting what the demand and price will be at the time of gathering. He certainly cannot know what the weather will supply from planting to harvest. Apparently he is so absorbed with weather predictions and the vagaries of the market that he overlooks the fact that there are things he could do to make his crop worth more money.

For one illustration, we had an opportunity a few months since to attend a civic gathering in a cotton growing section. Present were some cotton farmers and these were wide-awake, intelligent men. Also present were the executives of the local cotton mills. A discussion arose as to why the local mills stubbornly refused to pay the local farmers for cotton the price per pound quoted on the cotton exchange. The mills were accused, no doubt correctly, of importing cottons from other parts of the state and other states, and it was charged that they refused to use local cotton at any price. The farmers were annoyed and inclined to be a little angry and abused. They owned stock in these mills; they may have subscribed with the expectation of more readily selling their cotton with less effort and at an increased price. Now any spinner will immediately appreciate the situation and the difficulty. The spinner will know that this cotton lacked the staple or character absolutely required to spin the yarn suitable for the mill's use. The trouble was that the farmers knew nothing about spinning.

Establish a "Bench-Mark"

Spinners know that longer staple makes stronger yarn; that there is a difference in running the work due to the character or "body" of the cotton used, and that the strength of the yarn varies accordingly. They know that some cottons contain much more fly than others. They generally know that cotton raised in certain immediate localities makes stronger yarn than some other, and that cotton varies according to growing conditions from year to year. Still some mills pay more attention to grade than to staple.

Nevertheless, we venture to ask how many farmers and how many spinners know there is a 5/8 to 3/4 in. cotton grown in China that will make a stronger No. 20 than most 1 in. cotton grown in this country? How many know of the experiments of the United States Department of Agriculture in spinning yarns grown from selected seed; that there are cottons that staple 1 to 1 1/16 in. that spin yarn superior in strength to average cotton of 1 1/4 in. staple; and that the same relative difference has been established in all lengths? This subject would provide opportunity for more expansion than the present occasion and space afford. We suggest, if such a result could be accomplished, that it would be helpful to establish a "bench-mark" or standard for character or "body" of staple. A cotton of good character will spin better and will make a stronger yarn. By way of illustration, we have seen 1 1/8 in. cotton being spun into a yarn that was no stronger than is normally gotten from 1 in. staple of average character. We assume that the mill was paying for 1 1/8 in. staple. We have also seen 1 in. staple making yarn that tested better than normally produced from 1 1/8 in. staple, and doubtless the mill was buying 1 in. staple.

For the present we have to deal with conditions and factors somewhat as we find them. The most patent characteristics of the cotton fiber which we have to meet, are the different lengths of staple by classification, and the large proportion of shorter fibers in any lot. As is well known, especially to those who have combed cotton, these shorter fibers vary in length from the full length of the classification down to, say, 1/8 in. Of course the number of these short fibers varies, but they amount to approximately 20% of the weight of the cotton, and to 30 or 40% of the number of fibers by actual count. Moreover, there are a few accompanying fibers that are considerably longer than the assumed length of staple. Let us mention in passing that such a setting of the drawing rolls, or such an arrangement for drawing that does not break these longer fibers, thus losing the benefit of their increased length, is very desirable.

However, it is soon apparent that drawing the fibers becomes much more of a problem because of the large number of these varyingly short fibers. It is plain that if all the composing fibers were of uniform length, and there were always a uniform number in any given cross section of roving, the problem of drawing would be simplified. The main problem then would be the speed with which the fibers could be drawn, rather than the amount of draft. As it is now, the matter of the speed with which fibers are drawn, of inches drawn per second of time rather than merely inches drawn irrespective of speed and time, generally does not receive the consideration that the result would warrant.

It becomes increasingly evident that the problem for the machine maker is to produce a device or arrangement whereby, when the fibers are drawn, they are kept under such control as to draw evenly, notwithstanding the unevenness or varying length of fibers.

It is generally recognized that the card as a machine process distributes the long and shorter fibers fairly uniformly. It is also realized that an improper equipment, speed, or setting will subsequently draw the fibers unevenly, producing thick and thin places. Accompanying this there is a tendency for the longer and shorter fibers to segregate.

Control of Fibers

To accomplish this control and to draw the fibers uniformly, many efforts and devices have been proposed during the many years since the introduction of the familiar drawing rolls first patented in the name of Lewis Paul, in 1738. There have been so many of these devices proposed and their good features or, on the other hand, disadvantages and reasons for

failure, discussed from time to time, that we intend to refer only briefly to the latest developments or to such that appear likely to survive.

It is recognized that the familiar drafting equipment is fairly satisfactory so long as we ask of it sufficiently slow speeds and, of more effect, the sufficiently short drafts hitherto known as moderate drafts. Nevertheless, we have found that we can accomplish an improvement in the yarn and at the same time very considerably increase the draft at each stage. To do this, the drafting element is composed of small rolls or of belts, or of a belt or belts and rolls in combination. The choice between these is governed by several factors. Undoubtedly, the belts or belt and roll combination provide the greatest capacity for length of draft and, therefore, can accomplish an actual drawing from card sliver to yarn with less processes or stages. However, it has been found that this practice can be overdone, for we are confronted with two facts which become problems. The weight of the card sliver cannot be controlled closely enough but that it is desirable and necessary not to cut out too many doublings. Secondly, there is always a certain amount of fly spilled out at each stage of drawing. It is obvious that every process eliminated also takes away so many opportunities of removing this fly, rather than to save it to be spilled upon the spinning frame.

Capitalizing Longer Draft

We have then the choice of capitalizing the "longer draft" equipment by one of the two procedures. By the first, we simply eliminate one or more processes of roving, but while we avoid a process we may find it necessary to make a somewhat lighter roving on each of the remaining processes. By the second method, we may eliminate one process, or none, and from each remaining process produce a coarser or heavier roving.

A calculation of one method as compared with the other, and for various numbers of yarn, will show that there is not a great increase in the number of roving frames employed, nor in the cost, by adherence to the second method. We expect that mill men will conclude because of the more even yarn bobbin for bobbin, more even and therefore stronger yarn inch for inch, and also less fly to contend with on the spinning frame, to retain the greater number of doublings. Competition to produce yarn of better weaving or knitting qualifications will urge this procedure. Further, it is obvious that a mill being newly equipped throughout has an advantage against changing over a mill. However, in most cases the mills are equipped with the desirable sizes of roving bobbins and so the problem is more simple, for the use of longer spinning drafts consists in merely changing the drafts of the roving frames and of reequipping the drafting element of the spinning frame.

Here arises the question of just what organization and how long drafts should be used. We find we can make yarns that compare favorably in appearance, are even, and as strong or stronger than formerly made, and this with drafts double, and even more, those previously determined as good practice. As has always been true, the product will be governed in part by the preparatory processes, the equality of the roving furnished, and particularly by the cotton used.

Many and repeated experiments indicate that the following rules may be expected to apply universally and therefore are safe to use. A shorter draft will make a more even and a stronger yarn, but the increase is not great unless we are attempting a draft considerably in excess of that the cotton used will permit. The length of the draft is directly in proportion to the length of staple. Yarn made from a longer staple suffers less with over-drafting than when made from short staple.

By way of illustration of what can be accomplished with the longer draft capacity of the present drawing element, we have prepared some organizations according to the long draft or high draft method. In these organizations we have used double roving in the spinning frame creel. Different sizes of roving frames are used in different localities or under different conditions, so we have assumed average mill practice usually employed for respective sizes of roving. It is realized that these organizations may be deviated from to meet conditions in mills already equipped. The difference in the organizations for each number shows chiefly the number of roving frames discarded by the use of high draft, and the saving in cost per pound may be readily calculated according to wage conditions found. It may be noted that in the high draft organization the number of spindles per roving frame is less than in the regular organization, and therefore the total number of roving frame spindles discarded is greater than first thought would indicate, as judged by the number of roving frames discarded.

22s - 9000 POUNDS - TEN HOURS

REGULAR ORGANIZATION - THREE PROCESSES

Hank	Draft	Bobbin	Production Per Spindle	Spindles Per Frame	No. of Frames
0.60	4.0	12 x 6	20.9	72	6
1.60	5.4	10 x 5	6.3	108	14
4.40	5.6	8 x 4	1.8	160	32
22s	10.0	Ring Frame			
				Total Roving Required	52 Frames

HIGH DRAFT - THREE PROCESS - DOUBLE ON SPINNING

0.46	3.1	12 x 6	29.0	64	5
0.90	4.0	10 x 5	13.0	88	8
2.45	5.5	8 x 4	4.0	128	18
22s	18.0	Ring Frame			
				Total Roving Required	31 Frames
				Saving in Frames	21

HIGH DRAFT - TWO PROCESS - DOUBLE ON SPINNING

0.80	4.9	11 x 6½	14.64	76	8
2.40	6.0	8 x 4	4.08	128	18
22s	18.3	Ring Frame			
				Total Roving Required	26 Frames

30s - 9000 POUNDS - TEN HOURS

REGULAR ORGANIZATION

Hank	Draft	Bobbin	Production Per Spindle	Spindles Per Frame	No. of Frames
52 gr. 0.160					
.70	4.4	11 x 6½	17.14	76	7
1.90	5.4	9 x 4½	5.00	120	15
6.00	6.4	7 x 3½	1.17	168	46
30s	10.0	Ring Frame	0.23		
				Total Roving	68 Frames

HIGH DRAFT ORGANIZATION

56 gr. 0.149					
.50	3.4	12 x 6	26.18	68	5
1.10	4.4	10 x 5	10.16	88	11
3.00	5.5	8 x 4	3.04	144	20
30s	20.0	Ring Frame	0.23		
				Total Roving	36 Frames
				Saving	32

40s - 9000 POUNDS - TEN HOURS

REGULAR ORGANIZATION

Hank	Draft	Bobbin	Production Per Spindle	Spindles Per Frame	No. of Frames
.40	3+	12 x 6	33.66	60	5
1.00	5.0	10 x 5	11.34	92	9
2.80	5.6	8 x 4	3.35	128	21
8.00	5.75	7 x 3½	0.85	176	60
40s	10.00	Ring Frame	0.155		
				Total	95 Frames

HIGH DRAFT

56 gr. .149					
.52	3.5	12 x 6	25.2	72	5
1.40	5.5	10 x 5	7.5	120	10
4.00	5.75	8 x 4	2.06	144	30
40s	20.00	Ring Frame	0.155		
				Total Roving	45 Frames
				Saving	50

Organizations With High-Draft Method

Should Decline Profitless Orders

By Philip S. Tuley

President and Treasurer, Louisville (Ky.) Cotton Mills Co.

We feel that there is a reasonable chance for cotton mills to be fairly well occupied during the present year. The industry has, as you know, labored under serious disadvantages for several years past and whatever may have been the occasion for this experience, relief is not yet in sight. Piece-meal buying has been pushed to a dangerous extreme and it is hoped that a reaction will eventually come. The prevalence of buyers' markets has, of course, made this practicable. The uncertainties under this policy have been most disturbing to those responsible for the operation of cotton mills, because it has been impossible for them to plan production in volume with any confidence, especially where production must be made to specifications and cannot safely lead to accumulation of the finished product.

It seems to us that the cotton mills of the country owe it to themselves to adopt an attitude of greater independence with reference to these piece-meal orders and to decline them unless a proportionate advance in price applies in a measure to offset the extra cost of production involved. Of course, competition for business has resulted in many evils of price cutting and of the endurance of the disadvantages of the hand-to-mouth buying. Curtailment of production is a drastic and expensive remedy, but it is a policy which it seems to us should be adopted to a greater extent, for it is the only one that will bring the distributing mediums in wholesale and retail fields to their senses.

Prices are certainly ruinously low now and do not net the manufacturers a reasonable profit. Determination to refuse orders which do not carry a reasonable profit is, of course, the ideal means of relief, and it is earnestly to be hoped there will be a sufficient number of mills throughout the country having the requisite courage to decline business unless they can realize that profit essential to their continued existence.

Rayon Quite Lively for a Corpse

Its Obituary Has Been Written and Its Fate Bemoaned Many Times, but It Still Goes Merrily On—1926 Domestic Production Showed 20% Increase Over 1925—Year Was a Complex One, With Record Imports and Price Instability Factors

By Douglas G. Woolf

WHEN we predicted, in last year's Annual Review and Forecast Number of TEXTILE WORLD, that the 1926 domestic production of rayon would approximate 70,000,000 lbs., we did so with all the qualifications to which any self-respecting forecaster is entitled. We paid proper deference to all the variables which affect business in general, and a new industry such as rayon manufacture in particular. Consequently, when our yearly statistical pilgrimage reveals an output last year of approximately 62,500,000 lbs., any feeling of regret over that differential of 7,500,000 lbs. is subordinated to one of elation that the gap was not larger.

For 1926 was a year of variables in the rayon market, if ever there was one. Starting off on a period heralded as one of prospective rejuvenation in textile manufacture, the rayon producers encountered instead one of the most perplexing and generally unsatisfactory years in textile history. Not content with this trick, fate dealt out to them added complications in the form of record imports of foreign yarn plus general disparagement of rayon material due to technical abuse on the part of unskilled users.

The very fact that the domestic industry weathered such a storm from three points of the compass and finished the year with a production approximately 20% greater than that of 1925, is in itself a reflection of its virility which vindicates our bullish attitude toward it during the last six years. Any industry which, after two and a half years of price stability, can emerge triumphant from two reductions in rapid succession, with all the attendant uncertainty, is certainly entitled to its place in the sun.

Placing the Blame

It would take a better man than we pretend to be, to evaluate correctly the respective importance of the various factors which contributed to the perplexities of 1926 as a rayon year. Who is there that can say boldly that textile depression or domestic inter-competition, or foreign competition, or consumer "black-eye" was most responsible? Who is there that can assert confidently that the rayon industry would not have passed through certain growing pains in 1926 even if one or all of these extraneous factors had been absent?

Furthermore, the past is dead and such a discussion would be of value only insofar as it affected the future. And it is doubtful whether a proper knowledge of this relationship of facts would help much in a forecast. Just as six years ago, the very boldest of us would have thought many times before predicting an increase in domestic production from 9,000,000 lbs. in 1920 to 62,500,000 lbs. in 1926, so today must we hesitate in estimating the probable progress between now and, let us say, 1935. Possibly the man who holds the real key to the situation is the cellulose chemist, and he himself does not know whither his researches will lead or, if he does, he is keeping it carefully from the ears of this particular reviewer.

There are however certain futuristic statements which may be set down with a fair amount of assurance:

1.—Consumption of rayon in the country and in the world will expand rather than contract.

2.—Prices will tend downward rather than upward, and profits of producers will become narrower. This will mean that the large units have greater assurance of continued prosperity.

3.—Further and more far-reaching technical developments in the broad field of synthetic fiber production are inevitable.

The Price Reductions

From a trade standpoint, the most spectacular and interesting development of 1926 was the double-barreled price reduction. The market had moved along serenely since February 1924 when a reduction of 75c brought 150 denier, A grade, from $2.75 to $2.00 per lb.—and other sizes and grades in proportion. It was not until July 1 last year that another change was made at first hand. The cut effected then reduced the 150 denier, A grade, from $2.00 to $1.65. At that time it was stated freely in the market that a cut of 50c per lb. would have been advisable. The validity of this argument was indicated by the further reduction which went into effect Nov. 15 and which brought this key number down to $1.45 per lb.

A year ago, a prominent factor in the rayon industry remarked to us that the 150 denier would be selling within a year at $1.50 per lb. So far as we recall, our natural reluctance to pose as a forecaster, either directly or by proxy, prevented us from mentioning this prediction in print. Just recently, this same man told us that 150 denier would be selling at $1.00 per lb. in another year. The very fact that he was so correct for 1926 impels us to give him this space at this time. Personally, we do not agree with him entirely. We look for further gradual reductions in rayon in the future and we believe that the price of $1.00—and even less—is quite possible at some later date, but we doubt if cost leeways make such a radical change likely in the next twelve months.

However, look at in any way you wish, the rayon industry is now on a strictly competitive basis and has

TABLE II — U. S. AND WORLD RAYON PRODUCTION BY YEARS

	World Lbs.	U. S. Lbs.
1920	50,000,000	9,000,000
1921	65,000,000	18,000,000
1922	79,738,000	26,000,000
1923	97,000,000	35,500,000
1924	141,164,000	38,750,000
1925	185,000,000	52,200,000
1926	*210,000,000	62,575,000

* Estimated.

TABLE I — TEXTILE WORLD'S ANNUAL ESTIMATE OF DOMESTIC RAYON PRODUCTION

	1925 Lbs.	1926 Lbs.	1927* Lbs.
The Viscose Co	35,000,000	37,000,000	40,000,000
Du Pont Rayon Co	6,800,000	10,900,000	14,000,000
Tubize Artificial Silk Co. of America	5,200,000	7,000,000	8,000,000
Industrial Rayon Corp	2,250,000	3,400,000	3,600,000
Amer. Cellulose & Chemical Mfg. Co	1,500,000	2,500,000	3,500,000
Belamose Corp	675,000	875,000	1,400,000
Acme Rayon Corp	325,000	400,000	500,000
Other Firms	500,000	500,000	2,500,000
Total	52,250,000	62,575,000	73,500,000

NOTE: The Viscose Co. states that it could increase its 1927 production to 45,000,000 lbs., should market conditions require it. This development would increase our total estimate for 1927 to 78,500,000 lbs.

lost its one-time gold-mine glamor. Speaking quite personally, we could not be tempted to put $1.00 of our own money at the present time into a new rayon enterprise, whose capital was limited, unless it had the key to some technical development which we regarded as soundly revolutionary. On the other hand, we would put a good many dollars, if we had them, into large and well established firms because we feel that their past accomplishments are meager in comparison with their future possibilities.

The Import Situation

Second only to the price movements in point of interest was the question of importation. In the face of depressed textile conditions, record-breaking domestic production, and sharp price reductions, foreign manufacturers of rayon were able to send into this country in 1926 a poundage greater than the total American output in 1920. During the last three years, they have been able to increase their shipments from approximately 1,700,000 lbs. in 1924 to 7,000,000 lbs. in 1925 and 10,000,000 in 1926, exclusive of waste and yarn made from waste.

This statistical comparison speaks for itself. A great deal has been heard about the inferior quality of imported rayon. Some of this talk was undoubtedly true, as applied to certain cases, but American industry is not purchasing 10,000,000 lbs. of poor material. Much of the foreign rayon must have been of high enough quality to compete fairly with domestic yarn. It is true that the November cut proved to be a disheartening one to many importers and that they are understood to be at a loss as to how to meet this new competition. However, no domestic manufacturer is safe in ignoring the pressure from abroad, irrespective of our price levels. There is an impression, it is true, that 1927 imports will show a sharp decline from 1926 but, if we were a manufacturer, we would not take that for granted until we saw actual Government statistics at the end of the year.

Explanation of Tables

The tables accompanying this article represent a statistical survey of the rayon industry.

Table I analyzes the domestic production by individual companies for the years 1925 and 1926, and estimates the totals for 1927. The figures are authoritative with the exception of one company whose policy did not permit of the release of such information. In this instance, a figure was arrived at, based on our knowledge of the plant concerned. It will be noted that the probable output for 1927 should be 73,500,000 lbs. However this figure could be increased to 78,500,000 lbs. if market conditions required it, as The Viscose Co. states it could expand its output by that amount.

Table II compares total domestic rayon production by years from 1920 to 1926 inclusive. It also presents similar figures for world production.

Tables III and IV analyze the import situation on rayon for the last three years, Table IV showing the amounts sent in by individual countries.

Table V analyzes the consumption of rayon by industries, according to figures supplied by the two leading producers. Table VI analyzes the product of those two companies by sizes of yarn manufactured.

In Table IV, it is interesting to note that the Netherlands have advanced steadily to the position of principal shipper of rayon yarns to this country. Germany has also made marked gains while Italy has lost ground. The United Kingdom declined from over 600,000 lbs. in 1925 to approximately 100,000 lbs. in 1926.

In Table V it will be noted that "other knit goods," which of course means outerwear, have declined steadily as consumers of rayon while underwear has advanced to an equally marked extent.

What Producers Think

In order to prevent this article from becoming too much the expression of an individual, we are presenting herewith terse comments on the outlook as given to the writer by prominent producers:

S. A. Salvage, president of The Viscose Co.: "The two severe price revisions which took place during 1926 should convince those interested in rayon—producer and consumer alike—that the market is now in a stable position, and on account of the low level it has reached, manufacturers can now operate on rayon with confidence. We believe that all previous records on consumption of rayon will be surpassed in 1927."

L. A. Yerkes, president of the Du Pont Rayon Co.: "The year 1926 has not been a very good year for the rayon industry, but we believe that we are on a firmer foundation now than we have been any time during the last 18 months and we believe that the coming year will show an enlarging volume."

B. R. Clarke, president of the Industrial Rayon Corp.: "The coming year will probably bring forth a number of developments in the rayon industry. The demand for our product at this writing is quite exceptional, and, contrary to the usual December which is apt to be slow, the market has been very active. Many shipments have been specified for January and later deliveries. The new year opens up with every indication of a demand much greater than the last few months would indicate. The ex-

(*Continued on page* 295)

Table III

RAYON YARN IMPORTS, BY MONTHS

	1924 Lbs.	1925 Lbs.	1926 Lbs.
Jan.	251,951	205,627	597,103
Feb.	132,717	619,408	643,448
March	87,430	522,139	1,257,034
April	89,444	431,686	739,247
May	96,555	332,737	769,477
June	144,664	308,592	857,912
July	78,050	546,695	739,128
Aug.	119,196	590,357	661,759
Sept.	181,614	622,304	878,604
Oct.	170,120	825,223	995,315
Nov.	170,238	1,118,679	964,164
Dec.	190,008	877,064	1,023,096
Total	1,711,987	7,000,521	10,126,277

RAYON WASTE IMPORTS, BY MONTHS

	1924 Lbs.	1925 Lbs.	1926 Lbs.
Jan.	313,750	704,031	584,460
Feb.	394,942	575,415	218,883
March	253,935	457,446	462,894
April	261,409	393,433	332,068
May	404,006	396,091	258,985
June	276,480	271,357	205,859
July	245,857	134,957	310,237
Aug.	251,654	313,603	635,435
Sept.	642,602	565,873	320,278
Oct.	815,860	575,543	326,126
Nov.	686,800	577,516	171,838
Dec.	810,859	410,908	546,548
Total	5,358,154	5,376,173	4,363,611

IMPORTS OF YARNS MADE FROM RAYON WASTE

	1924 Lbs.	1925 Lbs.	1926 Lbs.
Jan.	3,271	16	1,937
Feb.	427	5,984	31,142
March	2,334	16,982	18,655
April	3,362	26,194	15,782
May	12,632	7,548	11,142
June	1,175	.....	18,545
July	5,508	34,171	29,103
Aug.	3,518	6,837	8,530
Sept.	119	9,046	15,906
Oct.	3,631	34,403	3,340
Nov.	10,817	6,202	3,400
Dec.	952	20	6,787
Total	47,746	147,403	163,869

TABLE IV — RAYON YARN IMPORTS INTO U. S. BY COUNTRIES

	1924 Lbs.	1925 Lbs.	1926 Lbs.
Austria	16,826	149,259	352,494
Belgium	274,960	589,840	739,509
Czechoslovakia	18,417	21,256	9,734
France	13,376	298,344	713,412
Germany	231,288	1,515,016	2,554,192
Italy	107,573	2,261,965	2,489,284
Netherlands	577,551	1,003,682	2,587,337
Switzerland	126,343	470,934	509,806
United Kingdom	345,292	600,583	107,030
Canada	358	16,707	.....
Hong Kong	3	.....	.....
Gibraltar	.....	13,813	.....
Poland and Danzig	.....	54,732	13,093
Spain	.....	10	50,100
Japan	.....	4,380	.....
Hungary	.....	.....	25
Totals	1,711,987	7,000,521	10,126,277

TABLE V — CONSUMPTION OF RAYON BY INDUSTRIES

(Figures Supplied by The Viscose Co. for Their Production)

% Consumed in:	*1926*	*1925*	*1924*
Hosiery	25	28	23
Cotton Goods	21	26	15
Silk Goods	14	16	18
Underwear	24	13	11
Other Knit Goods	3	5	14
Woolens and Worsteds	1	1	1
Braids, Elastics, Etc.	1	.....	.....
Miscellaneous	11	11	18
	100	100	100

(Figures Supplied by Du Pont Rayon Co., for Their Production)

% Consumed in:	*1926*	*1925*	*1924*
Hosiery	23	18	19
Cotton Goods	20	23	14
Silk Goods	11	18	22
Underwear	28	6	4
Other Knit Goods	5	10	14
Woolens and Worsteds	....	.....	.....
Braids, Elastics, Etc.	3	.....	.....
Miscellaneous	10	25	27
	100	100	100

TABLE VI — PERCENTAGES OF SIZES MANUFACTURED

(Figures Supplied by The Viscose Co. for Their Production)

	1926 %	*1925* %	*1924* %
150 denier, % of total.	81	71	65
300 denier, % of total.	12	17	20
All others, % of total.	7	12	15

(Figures Supplied by Du Pont Rayon Co., for Their Production)

	1926 %	*1925* %	*1924* %
150 denier, % of total.	75	56	49
300 denier, % of total.	16	28	34
All others, % of total.	9	16	17

Possibilities in Staple Rayon

Broadens Field of Artificial Silk by Affording Fuller and Spongier Yarns, Which Produce Warmer and Softer Fabrics—Counteracts Shrinkage When Mixed With Wool—Suggestions for Machine Settings—Tests Show Breakage in Combing to be Slight—Ply Yarn Effects

By S. Kershaw

THERE are occasionally healthy respites in the process of developing some new industry. These are necessary because problems are encountered which, if tackled, may take weeks or months to solve; and the fact that efforts are made to probe them, instead of avoid them, is all to the good of a developing industry. When patterns are produced and sent around the world, time must elapse before a consensus of opinion is obtained, and then careful note must be taken of all the pros and cons. Extended trials are then necessary; as percentages may need readjusting, new colorings may be asked for, and even demands made for softer and better handle or more pleasing draping property.

In the case of staple rayon, a lull may mean a complaint to the manufacturers of the raw material, and months of experimental work on their part to gain some small improvement on the original fiber. Therefore, any temporary respite from orders of these goods may mean that minor blemishes are being doctored, and inefficiencies restored or balanced.

Suitable Name

Old prejudices against the fiber continue to diminish, and will soon be extinct. The stigma usually associated with artificiality of any sort is passing. The term "staple rayon" is hardly suitable to designate the new material without being qualified, as in most cases it is too comprehensive or too general, and does not indicate whether the material referred to is viscose, nitrocellulose, celanese, etc. We suggest that for clearness, the terms "staple viscose," "staple nitrocellulose," "staple celanese," etc., be used. The different dyeing properties of these materials make it imperative that either these names, or names indicating the dyeing features—or at least names adopted with these ends in view—be used to prevent misunderstanding.

Up to the present, no strikingly attractive fabric suitable for outdoor wear and containing staple rayon and wool, or staple rayon alone, has appeared. Some of the cloths we have seen were more suitable for winter wear than for summer. This is in striking contrast to expectations. Thinking of the luster and sheen of rayon, summer wear is at once visualized; yet, for ladies' and men's summer clothing, it has made little progress so far.

Filament Rayon Disparages

The fact that filament rayon preceded staple rayon manufacture may be responsible for part of the objection to the latter. Wearers of filament rayon have a rooted objection to the weight of some of the knitted fabrics, due to its relatively great density. The luster of these goods sold them and was responsible for their being worn. Apart from this, there was very little to recommend them. In the new staple rayon cloths, many of the defects of the filament fabrics are removed; but the sheen, or excessive

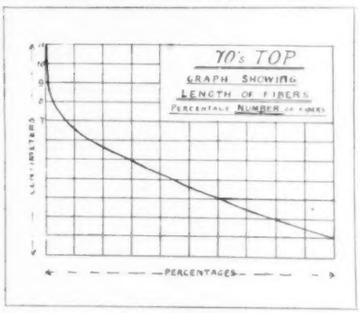


TABLE I
70s Cape Top

Length (CMS.)	Pct. weight of fibers	Pct. No. of fibers
11	0.22	0.07
10	0.30	0.10
9	1.03	0.39
8	3.21	1.27
7	8.54	4.12
6	15.02	8.45
5	20.33	13.73
4	18.85	15.87
3	15.32	17.24
2	11.19	18.90
1	5.89	19.82

brilliancy, of the filament silk is absent.

So long as luster continues to attract, so long as dresses are made scanty in length and without sleeves, luster will continue to please; but a return to fuller dresses would preclude the use of excessively lustrous goods on the ground of their being too showy. Thus, we may say that a return to the styles of eight or nine years ago may bring with it a demand for cloths such as can be produced from staple rayon and wool in association. If these conditions are not likely to be realized in the near future, new schemes will be necessary to enhance the popularity and vogue of rayon and wool in combination.

Sectionalized Industry

It is thought by many that the sectionalized condition of the worsted industry is in part responsible for the slow progress of development in staple rayon. There is felt to be a need for an intermediate link, an adapter, interpreter—call him what you will—for welding the different branches of the industry into a whole. When the comber and spinner have each done their best, and the product has been taken in hand by the manufacturer and finisher, the former are disappointed when they are shown the result of their combined efforts. How much easier is the production of satisfactory yarns, cloths, and garments, when some master mind controls the whole work from start to finish, and when the whole field of resources is explored, and every avenue traversed which offers successful business.

Filament rayon has had great success as a decorative material, and has helped to sell many million yards of cotton and wool fabrics in which it has appeared as a spot, chevron, wave, or floral design. The spun rayon will not enter into competition with thrown rayon for this class of goods. In the making of utility yarns for 100% rayon fabrics, the rayon should be spun. Yarns for other fabrics in which from 25 to 60% staple rayon may be mixed with wool are also first combed, then drawn and spun.

Filament rayon, when used for many fabrics, has not proved altogether satisfactory; while the defects in many cases are not present when the staple fiber is used. Staple rayon manufactured on worsted machines gives fuller and spongier yarns, from which are produced warmer and softer-handling fabrics, much to be preferred for underwear, and certainly more useful for making outer garments. The "air-content" of spun yarns is most important from the standpoint of warmth, as everyone with a knowledge of physics will affirm. However, with an increase of this property, there is a decrease in the luster of the material, every crossing of fibers by twist or short ends upsetting the reflection from the yarn surface.

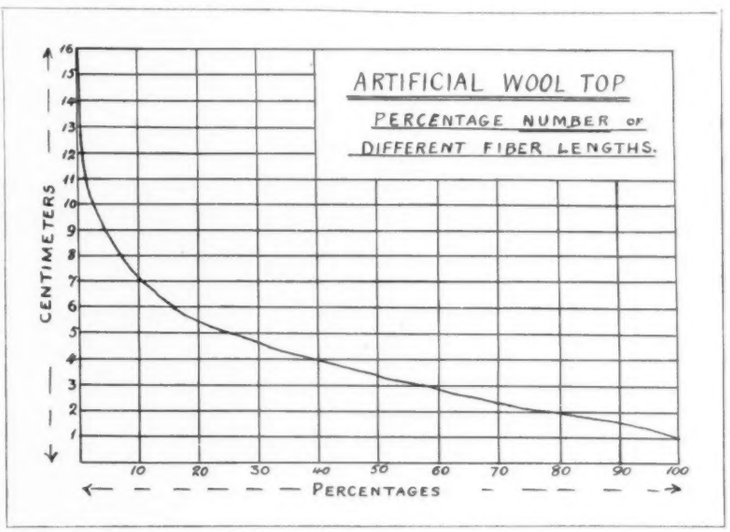


TABLE II
An Artificial Wool Top

Length (CMS.)	Pct. weight of fibers	Pct. No. of fibers
16	0.06	0.01
15	0.12	0.03
14	0.40	0.09
13	0.97	0.26
12	1.62	0.46
11	2.08	0.65
10	3.24	1.12
9	3.12	1.20
8	5.49	2.37
7	7.29	3.60
6	9.19	4.98
5	13.30	9.07
4	18.74	16.20
3	14.81	17.08
2	14.40	24.91
1	5.15	18.98

Counteracts Shrinkage

There are one or two things to be borne in mind in using rayon and wool in combination. Great emphasis has been placed on the weakness of rayon when wet, and its tendency to stretch when in a damp state. For many purposes this has been a big disadvantage. However, when associated with wool and made into a spun yarn, the latter fault becomes a virtue. Difficulty has been encountered in the behavior of wool when wet: viz., shrinking. It has been necessary to shrink all wool goods so that, with reasonable treatment, they could not be expected to shrink further. Cotton and wool blends have been made with a view to counteracting shrinkage in underwear, and have met with a fair amount of success. The blending of wool and rayon before spinning has been found to act in much the same way, the fibers acting contrary to each other, and counterbalancing the stretch of one and the shrinkage of the other. The best results have been obtained when using 60% wool and 40% rayon.

Processing Rayon and Wool

The processing of wool and rayon blended in combing is not difficult when the percentage of wool is 50 or over. If this material is required for fine counts—say 40-count or over—about 2% of special oil will be helpful in making regular yarns. In gill boxes the material should be given freedom, as rayon fibers are nonelastic and soon break when overcontrolled; in fact, the ratch in all processes should allow the longest fibers to be free while under draft. How-

ever, to gain fiber freedom in these machines we do not recommend alternate fallers; easing the front roller about ⅛ in. may give all the freedom required at the front of the box. If this remedy fails, fallers with only one row of pins will be useful.

It is known to all practical wool drawers that the amount of twist inserted in rovings is based on trials or "pulls" made by hand. The overseer or manager takes a length of slubbing between each hand and pulls as though he would break it. The resistance depends upon the amount of twist, and it is sought to impose a twist strong enough to pull the bobbin around in winding on and off, but easy or slack enough to allow each fiber, when gripped by the front roller in the succeeding process, to be pulled through the roving without breaking, and passed forward into the newly formed roving.

Each fiber under draft is influenced by (a) the amount of twist in the roving; (b) the number of fibers in the roving, and its position in relation thereto; (c) the distance between the back and front rollers, and the position and weight of the controlling elements, such as the tumblers, carriers, etc.; (d) the relative speeds of the back and front rollers; and (e) the frictional resistance of fiber on fiber, dependent not only on the speed and number of fibers, but on the length and surface structure of the fibers. All of these factors are known and subconsciously govern wool drafting in worsted yarn manufacture, but assume a new importance in staple rayon drawing, whether alone or mixed with wool.

In trying the strength of the slubbing for the amount of twist required, rayon is found to behave more like mohair than wool, and any strength possessed by the slubbing is due more to twist than fiber surface structure. When the pull is applied and the twist is more than sufficient, the resistance is stubborn; but, when the fibers begin to slip, a continued slight pull will break the slubbing. In the case of wool, especially fine wool, frictional resistance is maintained until the break is complete. Early experimenters, unless previously familiar with mohair, were at a loss respecting twist adjustments in rayon roving and in rayon and wool roving. If advice of a practical nature may be offered, it is that the weakness of slubbings subsequent to the first break be ignored; the test to be based on the first slip only.

The strength and elasticity of rayon fibers are not as great as of wool fibers of similar diameter. Fibers breaking under strain often roll up into small pin-head balls, termed neps, and cause yarns and fabrics to be "specky." Excessive twist would multiply their number, so this must be carefully avoided.

Ply Yarn Effects

There are many effects produced by twisting filament rayon with spun rayon or rayon and wool, and by even associating the two latter in a compound thread. The use of these yarns has not been fully exploited. There are effects yet to be produced and uses for them which can only be found by further experiments.

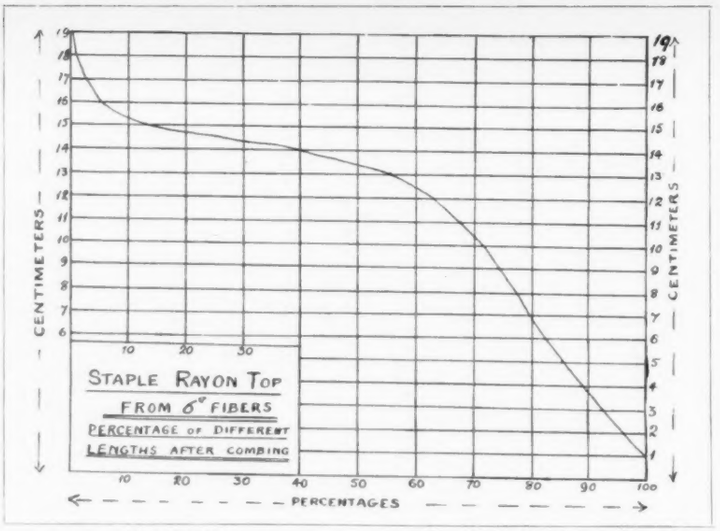


TABLE III
Staple Rayon Top from 6" Fibers

Length (CMS.)	Pct. weight of fibers	Pct. No. of fibers
19	0.65	0.36
18	0.87	0.53
17	1.80	1.15
16	4.26	2.90
15	11.32	8.22
14	35.36	27.48
13	17.61	14.74
12	8.30	7.53
11	4.47	4.42
10	3.39	3.69
9	2.60	3.15
8	2.02	2.75
7	1.66	2.58
6	1.52	2.76
5	1.23	2.68
4	1.08	3.35
3	0.87	3.92
2	0.58	3.16
1	0.43	4.68

When these twist threads have been made, it has been found that the rayon becomes the core thread, around which the wool wraps. This is not in accord with the wishes of the manipulator. To obtain an opposite effect, a fancy twisting frame could be used, where one set of rollers delivers faster than another, the rayon being guided through the faster rollers and becoming the display thread. A simpler arrangement, suitable for two-ply threads only, is to have the dolly roller of an ordinary twisting frame arranged in two diameters, the wool thread to pass around the smaller and the rayon around the larger, thus gaining the same object in a more economical manner; i. e., without installing special machinery for making two-ply yarns.

Nothing in the nature of a standard yarn or fabric can be yet said to have resulted from all efforts made with staple rayon. It is being used both for hosiery and weaving purposes. With blended rayon and wool, some very beautiful effects are produced in dyeing, the artificial fiber showing up in bright speckled form. The novel and pleasing character of these goods assures them a market; and, as this effect is not obtainable with filament rayon, the staple will find increasing use for this purpose. For other fabrics, where filament silk is too dazzling, spun rayon should be tried, not in pro rata amounts, but in bigger proportions.

Reference has already been made to the cross dyeing effects produced where wool and rayon have been blended in combing or drawing. Costume cloths and suitings resemble botany mixture cloths of two colors; and, from the same "gray" piece, about a dozen two-color effects are made. Considerable pressure has been exercised to obtain staple celanese for the same purpose, in order that three-color effects might be produced in the same way. We have no doubt that before long an acetate rayon will be offered in this form; and, with its softer handle, in addition to a third color obtained by dyeing only, the newer fabrics may enter into close competition with botany and crossbred mixture yarns.

The so-called "artificial wool" does not appear to promise as great success as staple rayon. Its greatest asset is a chemical property causing it to take a different color in dyeing. It can be used for speckled and decorative novelties.

Certain artificial fibers, other than rayon, break up into short lengths during combing, and must be helped through the drawing by wool. This is in contradistinction to staple rayon, an analysis of these tops showing that very few fibers break in combing. The results of tests of these materials, and of 70s Cape top, made on the Schlumberger top-testing machine, are outlined in Tables I to IV, and are plotted in the accompanying graphs.

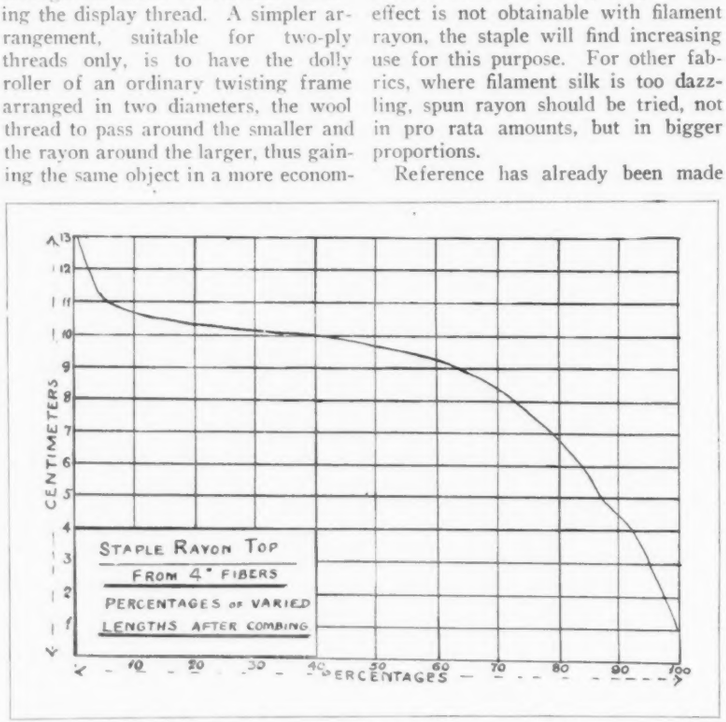


TABLE IV
Staple Rayon Top from 4" Fibers

Length (CMS.)	Pct. weight of fibers	Pct. No. of fibers
13	1.76	1.11
12	1.06	0.76
11	3.17	2.37
10	43.00	35.39
9	26.44	24.00
8	9.17	9.43
7	4.93	5.79
6	3.52	4.83
5	2.47	4.06
4	2.11	4.33
3	1.06	2.91
2	0.53	2.11
1	0.35	2.88

More Active Demand Likely

By J. E. Edgerton

President, Lebanon (Tenn.) Woolen Mills, and President, National Association of Manufacturers

From the viewpoint of our particular branch of the textile industry, the indications are that for the next few months the demand for textile products will be increasingly active. The natural trend of values would seem to be slightly upward, but it is impossible to forecast with any degree of reliability because of the throat-cutting practices into which textile manufacturers have fallen under the pressures of overproduction and organized buying.

Conditions for good business seem to be fundamentally sound at the present time, and except for obstacles that may be imposed by the stupidity of the industry itself, I can see no reason why there should not be this year a decided improvement in business over the last year. The industry is still the least or worst organized of any that exists and will continue to a great or less extent to be the victim of its own folly until it learns how to relate itself to the problems of the rapidly changing world.

On the basis of present and anticipated costs there can be no rational expectation of appreciably lower prices within the next several months. Whatever recessions occur will be at the expense of already very narrow margins, and may not be regarded as wholesome. Altogether, however, the outlook is brighter than it was a year ago.

The Manufacture of Rayon Knit Goods

Certain Details of Conditioning, Winding, Knitting, Inspecting, Dyeing and Finishing—Oiling With Extractor, Wick, and Sprinkler—Knots in Winding—Importance of Checking Courses per Inch—Much Depends on Inspection—Folly of Finishing Fabrics from Same Knitting Machine to Different Widths

By Ken

The use of rayon in underwear has grown rapidly in recent years and the possibilities of future expansion along this line are believed to be very great. When rayon was first introduced to the knitting industry, its use, due to its coarseness, was limited to heavy fabric for the sweater, dress, and outerwear trades. Later when the individual filaments had been reduced in size and increased in number, it became adaptable for the finer classes of goods. The consummation of this development is the soft, pliable fabric of good draping qualities which is manufactured as described in the accompanying article.

BEFORE proceeding with details, let us analyze the position and progress of rayon knitted fabric in the knit goods market. The writer's first experience with this article was nine years ago, when what is now called rayon was known to the trade as artificial silk. Manufacturers at that time were producing a heavy cloth made principally from two ends of 300 denier on a coarse cut machine. Such cloth was consumed entirely by the sweater, dress, and outerwear trade.

The manufacturers' next step was the knitting of a finer and lighter weight cloth from two ends of 150 denier on a considerably finer cut machine, which produced a lighter weight, finer, and better cloth. Then came a demand from the underwear trade for a still finer and lighter weight cloth suitable for underwear and sleeping garments, which required an even finer cut machine and lighter denier rayon.

Today we have knitting machines built in this country fine enough to satisfy any demand. There is one machinery builder that builds a spring needle machine, sinker type, as fine as 34 cuts per inch, on which can be run one single end of 100 denier rayon if desired, producing a cloth running from 5 to 8 yds. per pound, according to stitch and diameter of machine.

Oiling the Rayon

Our first step in the course of manufacture is conditioning of the rayon in order to insure satisfactory winding and knitting. This operation in most mills is known as oiling, and several methods are employed. One is the use of a small extractor built especially for this purpose. The rayon is taken from the package in skein form and placed in the extractor. The desired amount of oil is allowed to flow over the silk, the extractor is started, and the surplus oil is thereby removed. The rayon is then again placed in packages and made ready for winding.

Another method is to take the dry rayon from the package, place the skeins on the winder swifts, and run over a wick placed in an oil trough located between the winder swift and the bobbin, allowing the rayon to pass over the wick which contains the oil as it is wound on the bobbin. This method requires one less handling of the skeins. The greatest difficulty in the oiling operation is to secure an even amount on each thread, as uneven oiling on the different skeins or bobbins means uneven knitting, due to uneven tension in being drawn from the bobbin by the needles.

A great many people consider an inexperienced boy at a small salary can carry on this operation successfully, but experience has taught some of us that this is one point of manufacture that requires considerable attention, because rayon not properly conditioned and wound cannot produce perfect knitted goods.

Sprinkling Method

For an even distribution in oiling, the writer has always found the sprinkling method preferable, in which a table about 8 x 3 ft. is employed, the top covered with oilcloth or smooth metal with no rough seams. The rayon is taken from the package and the skeins are then unwound, opened out, and spread on the table. The operator is supplied with a can having a perforated top similar to a salt shaker or sprinkling can. If 8% oil is desired after knitting, which is a good percentage to work on, place 1 lb. of oil in the can, mark the inside of the can at the height of the oil in order that the operator may know the exact amount of oil required for each package without weighing each time, sprinkle lightly over the open skeins, turn the skeins, sprinkle the other side, place in a package, wrap tightly, and, if possible, allow to stand overnight before winding. In wrapping be sure the paper contains no tar or any markings, as the oil will draw this out and the rayon will take it on. Such stains cannot be removed in later processes. Have the winder open the package with care so that papers may be used over again. Allowing the package to stand overnight wrapped tightly will allow an even distribution of oil. Another advantage in this method is that a softer bobbin may be wound and used on the knitting machines without "pull ups" of rayon.

Oils Used

There are many grades of oil and special preparations used for conditioning rayon. Neatsfoot oil is most generally used by manufacturers. There are so many grades of this that it is necessary from time to time to have different shipments of oil analyzed to learn if it is keeping up to standard. One serious trouble with this product is that, if in cold weather the temperature in the building where the oil is being used is allowed to fall too low, the oil will become stiff and flaky, which will produce very unsatisfactory results in knitting. If, however, the mill is kept at an even temperature, this product can be used with success. Another point to which considerable attention must be given is the question whether or not the dyer can remove the oil without excessive boiling in the boil-off. Some oils will become set and cannot be removed by the dyer, with the result that the finished goods will contain a very rancid odor which will prove very objectionable to purchasers.

Winding Process

Our next process is winding, which apparently is a very simple operation. Poor winding results in poor knitting; therefore, it is necessary to give this department every attention. For rayon it is always best to use as little weight on the swift as possible—just enough to wind a bottle bobbin that will not pull up on the knitting machine. Any added strain between the swift and bobbin removes the elastic stretch from the rayon, and this is needed in the knitting operation.

All parts of the winder with which the rayon comes in contact must be perfectly smooth. A rough spot will cause the cutting of one or possibly more of the filaments, causing cut or broken filaments to back up while the perfect filaments are being drawn on the bobbin. The yarn cleaners must be set according to the size of the rayon, so as to remove all dirt, lumps, and large knots made in the reeling operation. A good setting for the cleaners is to have them just close enough to trap a single knot in the rayon being wound. The operator must use the greatest possible care, tying only a weaver's knot and placing each knot below the edge of the build on the bottle bobbin. Should the knot be placed on the building space by the winder, in the knitting operation the machine will continually stop until the knot is removed or drawn in by the knitting, sometimes causing a hole or imperfection in the fabric. Numerous stops on the knitting machine mean loss of production, which must be avoided.

Knitting Machines

In the knitting of this fabric several types of knitting machines are employed, both latch and spring-beard needle, but the finer grades of cloth suitable for the underwear trade are being produced principally on the spring-beard, multiple-feed sinker or wheel type of machine.

Space will not allow going into details as to formation of stitch, cast-off, etc., so we will follow along the lines of operating the spring-beard needle sinker type machine. For the general trade today, the 28-cut machine seems to answer the purpose very well. Such machines are built from 12-in. diameter to 24-in. diameter, from 4 to 14 feeds, and a wide range of fabrics can be secured from them. For instance, a 17-in. cylinder 28-cut, using 150 denier rayon, will produce a cloth 4 yds. 18 in. tubular per pound of rayon up to a cloth 6 yds. 18 in. tubular per pound of silk. Any weight between these two figures can be produced from 150 denier rayon by lengthening or shortening the stitch on the machine. Such machines are equipped with mechanical stop motions stopping the machine automatically should there be any defects in winding, or should the knitting operator fail to observe any bobbin running out.

Duties of Operator

Knitting, beyond the mechanical end, requires more care than skill, as it is up to the operator to find the trouble and stop the machine, and up to the mechanic to find and remove the cause of the trouble. The operator must be careful and neat, and must keep the machines clean and free from surplus oil. A constant lookout must be kept for bobbins running out; tuck stitches; bad needle marks; holes; rough, uneven, and fuzzy fabric; and the possibility of surplus oil dropping on the goods. Oil spots produced by the machine are very hard and sometimes impossible to remove in the boil-off process, and will show in spots of a different shade when the goods are dyed and finished.

The boss knitter and mechanic must keep the goods as free from imperfections and damages as possible, and must see that the fabric being knitted has the proper number of stitches per inch, and that all feeds are drawing and consuming an equal amount of rayon. Should one or more feeds be allowed to draw more rayon than others, the result will be heavy and light circular stripes in the finished fabric, which are very detrimental to the sale of the fabric.

There may be times when the knitting machine will have a perfect setting, providing all feeds are working 150 denier, but one or more ends may

show uneven knitting due to off-size rayon. For example, we may have an eight-feed machine running a perfectly even piece of cloth and suddenly either a light or heavy circular stripe appears in every eighth course. This indicates that either one feed is drawing a longer or shorter stitch than the other seven, or the rayon being consumed by this one particular feed has become off-size, either to a lighter or heavier denier.

Courses per Inch

A good and safe method to follow to produce even knit fabrics is for the boss knitter or mechanic at the start of each piece or roll of cloth to count the number of courses per inch as the cloth leaves the needles. If the number of courses per inch are not correct to produce the weight of cloth desired, the machine should be adjusted to the proper stitch and all ends spotted until each feed draws the same amount of rayon. Great attention should be given the number of courses per inch in knitting, as the boss knitter must bear in mind that the manufacturers who are buying pounds of rayon and selling finished yards of cloth are figuring their selling price on the number of yards produced from a pound of rayon.

Should the knitter make a sample from a given number of pounds of rayon, knitting the sample 40 courses per inch, so many pounds of rayon should produce so many finished yards of cloth. The manufacturer figures the price accordingly, goes into the market, and secures business on the sample. The knitter receives instructions to start so many machines in operation on this number at 40 courses per inch. Should he set or allow these machines to be set to run 41 or 42 courses per inch, then and there the manufacturer will stand a loss of profit, as he cannot secure the finished yards per pound on which he has figured. On the other hand, should the machines be set up 38 or 39 courses per inch, there will be a considerable gain for the manufacturer, as he will secure more finished yards; but no doubt on the first delivery of finished cloth to the customer, there will come a complaint that the goods are not up to sample and possibly a cancellation of the order. The manufacturer may therefore either suffer a loss of profit or a loss of business and prestige in the market.

Inspecting

The success of any plant depends mostly on the quality and evenness of cloth produced in the knitting room. As the cloth leaves the knitting machine in the roll of desired size, our next process is that of inspecting. The cloth should be drawn down over a perch placed before a window where the light from the north enters. The operator should be well trained and should fully understand the necessity of clean cloth, free from imperfections, needle marks, etc., and should report at once to the boss knitter any imperfect point the goods may have, reporting the piece number and machine number on which the cloth was produced. The boss knitter can at once check up and learn if the fault has been corrected, and can also investigate why a machine was allowed to be kept in operation while making imperfect cloth. After inspection, the cloth is again placed in a roll and given a piece number and a record taken as to imperfections, knitting operator, style, machine by which produced, and any other information desired for future reference. The cloth is now ready for the dyer.

Dyeing

We must remember this cloth contains a certain amount of oil which, if allowed to remain in the cloth any great length of time, proves very detrimental. It seems that rayon treated with oil and allowed to remain in this condition, in time is the subject of a slow process of oxidation, which tenders the cloth and will result in numerous holes after dyeing. It is also well to keep the cloth from the knitting machines covered and away from light as much as possible. If the ends of the roll are exposed to light for any great length of time, they will become light-struck, and after dyeing will produce a streak of different color running perhaps the full length of piece.

Practically all dyeing is done today in the piece by what is known as reel and string machines, and is carried on by the usual method of dyeing. Care must be taken in this department in regard to matching shades, obtaining even and level dyeing, producing bright and brilliant colors, and obtaining desired softness and feel or handle of fabric. Rayon in the wet condition loses considerable of its original strength and must receive the greatest care in handling, as any undue strain or pinching of fabric will at once produce a hole and perhaps a drop stitch run that may continue to run for yards and make a second-class piece of cloth. After dyeing, the cloth is extracted and then placed in a dry room or run through an automatic dryer and dryed thoroughly.

Finishing

Next is the process of finishing, which requires the mangle type of machine with steam attachment to steam the goods before entering the rolls. The rolls should be equipped with both steam and water attachments so that any finish desired may be obtained, as a high gloss finish requires considerable heat. In the finishing operation, the cloth is drawn over a spreader before entering the rolls to give the width desired for the finished cloth. It is well to finish the cloth as near the natural width as possible.

If different widths of cloth are required, it is best to have different sizes of knitting machines. From an 18-in. machine, the writer has seen the same quality finished to produce an 18-in., 20-in., and 22-in. tubular fabric—which is very poor practice, as all knit goods, after washing, will return to about the original width.

From the finishing machine the

(*Continued on page 295*)

Finding Cost of Knitted Garments

A Form Sheet Devised and Successfully Used by the Superintendent of a Garment Factory

By Harry E. Kaemmer

MANY superintendents dread the time when they will be confronted with the question of costs and overhead expense. "Do you know what it is costing to produce your merchandise? Can you at any time tell what your overhead expense is per garment? Can you name these items in money and also in percentages?" Of course everyone realizes that overhead expense is a necessary item, but before being able to cope with it, it is necessary to know just what items enter into it, and also to devise a system of record-keeping that will not entail too much labor, as keeping this record also becomes an item of overhead.

Made a Form Sheet

Some time ago I took charge of a garment factory and the first thing I was confronted with was the problem of devising a method of cost finding that would enable me to know accurately what each garment cost. Piecework rates remained the same and I could easily handle this item. What caused me the most trouble was the finding of the accurate cost of the garment when shipped to the trade. After some time and thought, I made a form sheet as illustrated.

It will be noted that I have divided this sheet into six sections: (1) Salaries in the factory which were in the main non-productive. (2) Salaries in the office. (3) Items of factory expense exclusive of salaries. (4) Items of office expense, exclusive of salaries. (5) All money paid out for piece work. (6) Summary of all overheads.

In order to facilitate the keeping of this record, I arranged the clock numbers and payroll book in three sections. Section 1 contained all timework and salaries in the factory. Section 2 contained all salaries in the office. Section 3 contained all piece workers. This made it an easy matter to post these items to their proper places on the cost sheet. All invoices pertaining to the items of overheads were entered in their respective places as soon as received. Payroll items were entered each week. Items Nos. 1, 2, and 5 when totalled would equal the payroll. Items 1 and 3 when added would be factory overhead, and items 2 and 4 when added would be office overhead. A record was kept of the number of garments received in the stock room each day, and this record was turned into the office to be posted to the form sheet. At the end of each week or month we would divide the number of garments finished into the total of the various items on the sheet, thus giving an accurate cost. In this way we were able to know what each garment was costing, and what the overhead expense was on each garment, both in percentage and in money.

COST SHEET Week Ending .....

1. Factory Salaries (non-productive) Cutters' Salaries Other Cutting Room Labor Foremen Forceladies Timekeepers Packers and Examiners Shipping Room Labor Machinist Janitor Total		2. Office Salaries Total	
3. Factory Expense (exclusive of salaries) Power and Light Heat Machine Parts Light Globes and Supplies Janitor's Supplies Cartons - Cases - Shipping Room Supplies Freight and Express Miscellaneous Total		4. Office Expense (exclusive of salaries) Postage Stationery Telephones and Telegrams Interest on Borrowed Money Charity Taxes Insurance on Plant Workmen's Compensation Advertising Trade Papers Miscellaneous Total	
5. All Money Paid Out for Piece Work Total		6. Summary 1. 2. 3. 4. 5. 6. Total	
No. of Garments Produced Friday Saturday Monday Tuesday Wednesday Thursday Total		Cost per Garment 1. 2. 3. 4. 5. 6.	
Items 1, 2 and 5 - Payroll Items 1 and 3 - Factory Overhead Items 2 and 4 - Office Overhead			

Where Are Textiles among the Broadcasters?

Answer Seems to be Nowhere So Far—One Hosiery Mill Has a Station; One Carpet Firm Buys Time on Air—Department Store Broadcasting—Radio Essentially a Good-Will Builder—Wide Variety of Products Use It—Details of Costs and Methods

By William B. Dall

THE fact that out of about 550 radio broadcasting stations licensed at the beginning of last November, 30 were operated by companies whose chief business is distributing textiles, is not an impressive showing. Out of all the broadcast station operators on most recent lists, there is only one textile mill and this is American Textiles, Inc., Bay City, Mich. One of this firm's subsidiaries is the World's Star Knitting Co., and the call letters of this station are the initials of this name, WSKC.

The situation is worthy of review, however, because of the fact that so many enterprises have found it profitable to use the publicity or "indirect advertising," which is possible over the radio, to forward the interests of their businesses.

A Builder of Good Will

TEXTILE WORLD has conducted a survey of that part of this field which touches upon companies handling textiles which operate radio stations, and finds a unanimity in all returns to the effect that the operation of the station is an assured means of building good will, and that as a business proposition, it "pays."

In answer to the specific question "How, if at all, do your broadcast features tie up with your business," it was again unanimous that the tie-up was merely through mention of the firm name as operator of the station. Thus the station operated by one of the country's leading mail order houses announces itself as "This is WLS, the Sears-Roebuck station broadcasting," and a retailer located in Anderson, Ind., in turn announces himself as "Station WHBU, B. L. Bing's Sons, the Home of the Two Pants Suit." A number of station operators admit that the tie-up with their business is remote. A number of them find, however, that broadcasting actually brings them new customers, while as previously mentioned, all agree that it builds good will.

Out of the total number of dry goods retailers who maintain broadcasting stations, the following few are mentioned as the largest, in order to make clear the substantial nature of the concerns which have taken up broadcasting, though there are many small stores in isolated communities that get perhaps even more direct benefit from their broadcasting than do the big units:

Hale Bros., San Francisco; Kaufman & Baer Co., Pittsburgh; The Shepard Stores, Providence and Boston; Strawbridge & Clothier, Philadelphia; Gimbel Bros., Philadelphia and New York; Lit Bros., Philadelphia; The Outlet Co., Providence; John Wanamaker, Philadelphia; L. Bamberger & Co., Newark; Stix, Baer & Fuller, St. Louis.

Whatever retailers of this type do to facilitate their sales, has a direct bearing upon the success of the textile industry, because so large a part of department store trade is in dry goods. It has been the experience of one large retailer that a series of morning talks on foods by a well qualified expert was followed by increased sales in the grocery department along lines which suggested that they were stimulated by the talks. Direct tie-ups of this kind are rare, and in few cases are they ever tried for, but the experience suggests what may be possible along textile lines but which as yet has not been attempted in any broad way. It is interesting to note that over station WEAN, Providence, there are given "Fruit-of-the-Loom Talks" and "Lucy Lee Style Talks," both of which doubtless forward textile interests and suggest what may be done in individual cases.

Successful Whittall Broadcasting

The textile industry generally seems almost to have studiously avoided the broadcast avenue for publicity or consumer education. However, in addition to the solitary textile mill which runs a broadcast station as noted, the M. J. Whittall Associates of Worcester, Mass., have entered the field by putting on a half hour of good orchestral music on Friday evenings over the network of the National Broadcasting Co., the WEAF chain. The tie-up is indirect. Outside of the mention of Whittall's name as "Makers of fine domestic carpets and rugs," there is mention of their musicians as the "Anglo Persians," which is the brand of one of the Whittall rug lines, and the announcer frequently strings the musical pieces together by saying "Our magic carpet now takes us to Bagdad (or somewhere else) where we hear the melody of . . ." here follow the name of the musical number about to be played. The magic "carpet" of course helps unconsciously to bind together in the listener's mind the thought of Whittall and rugs.

That the Whittall company is satisfied with the results is indicated by the fact that this firm just recently completed a year on the air and renewed the contract for continuance of the service for another year. It is figured that the National Broadcasting Co's chain of stations covers the area of the country in which 85% of Whittall's business is done. Part of the campaign has involved the preparation of literature for retailers, including pictures, advance programs, mats for local newspaper advertising, etc., and it is said that 62% of the retailers handling Whittall rugs have taken advantage of what was offered and cooperated to capitalize the publicity and favorable impression made for Whittall, by tying up with this broadcast work.

Booklets have also been prepared with handsome illustrations of the Whittall mills, the orchestra and certain rug patterns in color, with reading matter describing the product, which are distributed without charge to those of the radio audience who follow the announcer's suggestion to write in and request them. A valuable check on the efficacy of this literature is whether the illustrated rug patterns have met obvious stimulation among the retail trade, and it is interesting to learn that those connected with this work state that the increased sale of these patterns is pronounced. The favorable impression which a good piece of entertainment makes upon the listener is said to be typified in the words of one listener who wrote to Whittall as follows: "If your rugs are as good as your orchestra, I will want nothing better."

The "Anglo-Persians" of W. J. Whittall Associates on their "Magic Carpet" ready for their Friday night air journey over WEAF and associated stations which cover a territory from which comes 85% of the Whittall business

Broadcasters from All Industries

An amazing variety of manufacturing and other interests have found worth while publicity via radio. The concerns which constitute the body of licensed broadcast station operators present an almost complete cross section of the life of the country. Perusal of the list indicates that religious bodies and education institutions lead all others in number of individual stations, though the great majority of these are low powered and of purely local interest. The next among the important groups include the manufacturers and distributors of electrical and radio apparatus, newspapers, hotels and theaters. There then appear with more or less numerous representation the following: Automobile dealers and garages, department stores, hardware distributors, electric light and power companies, municipalities and chambers of commerce, seed and farm supply companies, motion picture producers, storage battery makers, insurance companies, real estate developments, national guard regiments, hospitals, banks and trust companies, police departments, drug companies, furniture stores, amusement parks, mail order houses, local associations and individuals. On the list there is to be found one each of the following: Knitting mill, pottery maker, playing card manufacturer, baking powder company, tire manufacturer, street railway, labor union and flour manufacturer.

Among the businesses represented among the broadcasters who make this form of publicity part of their advertising plan and who buy time on the air from prominent chains of stations are the following: A chain grocery store, malt syrup maker, chain candy stores, tooth paste, soft drinks, radio sets, radio batteries, makers of musical instruments and talking machines, playing cards, spark plugs, railroads, cough drops, popular magazines, and cod-liver oil.

Great Increase in Stations

Last September there were 534 broadcasting stations in the United States and 283 in the rest of the world divided among 57 countries. The figures of Jan. 15 show that there are over 700 licensed stations in the United States, that more than 130 are

under construction and plans are said to be in hand for at least 250 more. It will be remembered that the Department of Commerce lost its control over broadcasting as the result of a U. S. Supreme Court decision last July and the industry has been spreading like a weed ever since. Everyone connected with it seems apprehensive of confusion in the future unless Congress enacts legislation to regulate it. Not only are the number of stations great, but early in January there were 285 of 500 watts or greater power, which makes about three powerful stations to every available channel in the band of wave lengths which is allocated for the use of broadcasting.

What It Costs

The old question, who is to pay for broadcasting, is being answered by the fact that the publicity and indirect advertising accomplished by those firms which partake is worth money to them, and at present they are footing the bills. Outside of ownership of a station, the sponsored program put out through a station which sells its time, is the other principal avenue of approach. As is generally known, the most expensive musical talent is employed regularly by certain firms who find this form of gaining public good will to be a paying proposition. Several firms which broadcast pay over $100,000 annually for musical talent alone.

It is believed that one of the reasons why new station operators are rushing into the field is the lure of making money by selling time. Some who have looked into the matter say that this is a false hope for the great majority of small irresponsible stations.

The September issue of *Radio Broadcast* reported the cost of time on the air for the Broadcasting Co. of America, then operating WEAF and 16 affiliated stations, as based on a charge of $4,080 for one hour after 6 p. m. over this group of stations. A half-hour in the evening cost $2,550. Daytime charges for the group were half the evening rate. A discount for weekly use was quoted ranging from 5% for 6 months to 15% for 12 months. Rates on WEAF alone were quoted at $600 per hour in the evening and $375 per half hour. The company named has been succeeded by the National Broadcasting Co. but it is understood that the figures remain about the same. The magazine quoted above also stated that smaller stations in various parts of the country quoted as low as $12.50 per hour for morning time, and that a multitude of rates lay in between. The situation is similar to buying magazine advertising space. As that magazine with the largest and best class circulation may command the highest rate, so a radio station with the largest and most influential following can obtain the highest figures for its time on the air.

As to the costs of operating a station the average of replies to the questionnaire which we sent out to a group of broadcasters, placed the installation of a 500 watt station at $20,000 and the annual operating expense at $28,000. On this last item there was great divergence, one estimate running up to $90,000.

Air Is Already Crowded

Competition for time on the air may be more disastrous than competition between houses in other lines of endeavor, since the program of one station superimposed on the program of another renders both impossible of enjoyment or even understanding at the receiving end. Station operators are therefore a bit alarmed at the great increase in number and power of stations.

The representative of one broadcaster to whom TEXTILE WORLD wrote for data, misunderstood the purpose, his fears apparently getting the better of him, and he replied to the effect that he had read between the lines of our letter, recognized that we were planning to start a broadcasting station and begged us not to. Instead he asked that we give full consideration to buying time on the air from some other station, since "The air was too full already, and those already in the game were crowded."

Many who did understand the purpose of the questionnaire stated that it would be better for all concerned if new broadcasters bought time of existing stations. Outside of owning a station, buyers of time comprise of course the other great class of participants. This class is important for the radio characters or teams best known to the general public today are for the most part those who appear on the chains of stations developed for commercial broadcasting.

Publicity That Reaches Home

The sales manager of the largest of these companies states that broadcasting is a general medium for publicity, and that the important thing about it is that it reaches homes. It reaches homes without classification, the only requirement on their end being that they have a radio receiving set. Indirect advertising through this channel has been found very helpful in creating a favorable impression on a consumer of a branded line of goods.

It apparently its not a means for direct returns, nor for the building of a prospect list, though through letters from listeners a list may be compiled and a limited amount of worth-while circularizing done. Some authorities believe that broadcasting is most helpful for a commodity which has high frequency of sale, and if this is the case certainly it has a place in textile distribution. In most families not many weeks go by without purchases of shirts, underwear, hosiery, towels, sheets and pillowcases, dresses, suits, coats, etc., and the favorable impression made upon thousands by a sponsored program has constant opportunity for reflection in his or her buying of textiles and textile products where the fabric may be identified.

The development of a distinctive group of entertainers may not be an easy matter, but once done their force is strongly cumulative. Such teams or groups as the Happiness (Candy) Boys, the Smith Brothers, Trade and Mark, the Cliquot Club Eskimos, Goodrich Silvertown Orchestra and Silver Masked Tenor, etc., appear at banquets and on various metropolitan vaudeville and motion picture theater stages. They are in demand and they carry the name of their product with them. Such groups are referred to in general conversation with their sponsor's name an integral part of them.

Among textile brands are many that are picturesque and suitable for characterization in broadcast features, such as "Lady Pepperell," the Mallinson elephant, the Corticelli kitten, "Indian Head," the Ipswich witch, etc.

Referring to program material the director of the station owned by a large eastern department store states, "There is no question but that the masses are being educated to the better class of music. Our returns have increased in the last three years for opera, symphony orchestras and the better vocal numbers about 60% and the dance orchestras have been relegated to about fourth place." Stunt broadcasting and important sporting event broadcasting always bring out great followings.

On the other side of the picture is the educational elements in programs and particularly stations which serve rural sections appear to get favorable reaction to such offerings. Most important among this is farm material and market news, and housekeeping information and cooking recipes.

Volumes might be written, and probably in the near future will be written, on the science of selecting program artists and material, but that discussion would out of place here.

Commercial Broadcasting

The salient fact is that commercial broadcasting is spreading. It is estimated that of the 30 stations in the New York area which are on the air daily, about 20 sell time. This is also quite as true in the smaller centers, and many stations operated by firms in various sorts of business are endeavoring to put their station on a self supporting basis by selling part of its time on the air. The commercial account of such stations has much increased during the last few months.

The matter of audience is clearly of the highest importance, and on anything so intangible it is of course natural that extraordinary claims be heard. Stations have loyal followings though they are hard to total up. Stations are much like magazines in that the best editorial content (featured material), will draw the most favorably disposed audience into contact with the advertising, only unlike the magazine every single listener to radio gets the advertiser's message. Actual selling talks via radio have been found to defeat their own end as a twist of the dial will bring in something more diverting, so that those who ought to know from experience recommend a mere announcement of the sponsor and that brief. Most good stations would not permit anything savoring of a selling talk, and before the present legal muddle in the radio field direct advertising was construed to be against the regulations of the Department of Commerce.

In many quarters broadcasting has come to be recognized as a most useful part of a national advertising campaign, and this recognition is believed to be in the ascendancy. The present scarcity of textile firms in the nightly melange of good-will entertainment must surely give place to adequate representation through which valuable textile brands may be made even more valuable to their owners.

Optimistic About Future

By E. A. Clements

President, Globe Knitting Works, Grand Rapids, Mich.

I feel very optimistic about the future. The big cotton crop brought the price of cotton down to a very low level, and this, to my mind, will stimulate business as there is very little tendency to lower the prices on underwear. The low level has been reached now and the big buyers are not looking for any further drop in the market. The tendencies are upwards and consequently buyers are placing their orders now and are not waiting for any further drops in the market.

Of course, the hand-to-mouth buying is still in force, but not to the extent that we have experienced in the past four or five years. I am looking forward to a gradual improvement in business and an upward tendency of prices. We have suffered long enough manufacturing merchandise at cost or even below cost, and if the buyer can be convinced that the market has struck bottom, there would be a tendency towards early buying which would be a God-send to manufacturers. We would have something tangible to work on and not have to do all the guessing of what is required on duplicate business.

1927 Will Be Cross Between 1925 and 1926

By Cartter Lupton

President, Dixie Mercerizing Co., Chattanooga, Tenn.

In my opinion, 1927 will be a kind of cross between 1925 and 1926. In other words, business will not be anything like as good as in 1925, and not quite so bad as 1926. In fact, we hardly see how it could be any worse than 1926.

As far as gray and mercerized yarns are concerned we think the price will remain practically unchanged for the next few months, and then gradually rise during the spring months. It looks now as though we will have a small reduction in cotton acreage, possibly as much as 20%, which means the cotton market will stay about where it is for the next few months.

We do not think that the actual ginnings will come within a million bales of the Government's final estimate of 18,618,000. However, we think the market has already discounted this fact.

We find the demand for mercerized yarns a little improved over the last three or four months, but we do not look for any decided movement one way or the other for some time to come.

Costs during Curtailment

Importance of Figures Based on Percentage of Operations—Effect of Excessive Production and Necessity for Balancing Supply and Demand—Adequate Cost System Must Provide Manufacturer With Records Showing Fluctuations and Guide Selling Agent in Pushing Profitable Fabrics

*By Ralph E. Loper**

Of R. E. Loper & Co., Cost Engineers, Fall River, Mass., and Greenville, S. C.

During periods of curtailment mills are confronted with the problem of basing cost figures on the proper percentage of operations. This is not an easy matter with short-cut or home-made methods. Cost systems that give quite satisfactory results under full-time operation may fail completely when running short time. In this article, Mr. Loper points out some of the common practices that give figures which are absolutely misleading. The influence of high production in securing low manufacturing costs is another subject that is taken up, but the author points out that high production may easily grow into excessive production, which reduces profits. A general knowledge of the facts in this article would simplify the work of the Cotton-Textile Institute in its efforts to stabilize the industry.

SINCE the peak of production, which was reached in cotton mills, during 1923, the monthly bulletins of the Department of Commerce indicate that operation has decreased by as much as 40% at times in spite of a steadily increasing number of spindles in place. (See Chart A.) This curtailment has been most acute in Massachusetts, but has at times affected the mills in nearly every section of the country.

These periods of curtailment present many interesting and worthwhile problems from a cost standpoint. They have brought out quite clearly the fact that an adequate cost system has a double duty to perform. Its first duty is to provide the superintendent with records showing the fluctuation in actual costs from period to period in considerable detail. These records bring to his attention the weak places and are invaluable in his efforts to control operations and reduce costs.

The second and equally important duty of an adequate cost system, is to provide the agent who sells the mill's product with a reliable guide in his efforts to choose the more profitable fabrics. To perform this duty the cost system must maintain accurately the true relation between the costs of different fabrics and indicate clearly the price at which each style becomes profitable, if the mill operates to capacity. The system should be able to provide this information in advance when inquiries are received for suitable new fabrics.

Why Some Systems Fail

Many mills have gotten quite satisfactory results from their cost system under full time capacity operation, only to find that their system fails them completely in several important respects during periods of curtailment. The only cost systems yet devised, which will do full duty for the superintendent in controlling costs and also for the agent in selling the mill's products, are based upon a careful and equitable distribution of the overhead to the various departments of the plant. This is the only way to be sure that each fabric gets its fair share of all the expenses of operation.

In spite of this fact there are still scores of mills, each making a variety of product, yet using some short cut, home-made method of handling their overhead which is absolutely misleading. The following inaccurate methods of distributing overhead are still in fairly common use.

Overhead Charged Uniformly per pound of Cloth. The question is often asked why it is necessary to divide the overhead between the weave room and the various yarn departments to get accurate costs by fabrics. Executives frequently argue that since they sell only cloth, all these charges must be borne by the cloth eventually so that it does not matter how they are distributed, so long as the correct total is included.

A careful study of the problem, however, shows that it is just as important to correctly distribute the burden as it is to charge each style with its own weaving piece-work cost. The overhead charges in a mill using simple looms will have as much effect upon the cost of the fabrics as the price of weaving. When the mill is equipped with automatic looms, the weave room overhead charges on cloth are often twice as great as weaving piece-work. Any cost system which fails to make each fabric bear its proper share of the overhead is sure to be misleading.

Overhead Charged Uniformly per Spindle. Not a few mills charge all the overhead to the spinning and assume that it is uniform per spinning spindle, and therefore is greater per pound on fine numbers because of the lower production. While this method is a step in the right direction, it leaves much to be desired because a careful analysis of the items which make up the overhead shows that between 35 and 50 per cent of them are caused by the mill owning and operating a weaving department, and that they would not obtain in a yarn mill. Under this method, if the mill has a diversity of products, the costs of high pick goods and of goods woven on narrow looms are figured too low, and the costs of wider cloth and of low-pick fast weaving styles are figured much too high.

Overhead Charged Uniformly per Loom. Among fine goods mills, which use some rayon and silk, one frequently finds that all the overhead items are charged to the weave room and assumed to be uniform per loom regardless of the style of cloth being run. It usually happens, however, that over 50 per cent of these overhead charges are due to the yarn departments and would not obtain if, as in England, the weaving mill should purchase all its yarn. That the overhead charges due to the yarn departments are not uniform per loom is quite evident when we consider that a loom running a filling sateen may require the yarn produced from 25 spinning spindles, while the same loom, using the same size yarns, but weaving a warp sateen, would require the product of over 50 spindles with a correspondingly greater amount of card room preparatory machinery. Charging the overhead uniformly per loom may cause errors of several cents per pound in the relative cost of fabrics.

Assuming the Mill to Be Running One Style. Another misleading way to apportion the fixed charges to the various styles is to assume that they are the same per pound on any style as they would be if the whole mill were put on to that style. If any style would throw the mill out of balance and cause idle equipment in one or more departments, that style would, by this method of figuring, be penalized with the general expenses chargeable to the idle machinery.

For example, if a mill which is equipped with 40 spindles per loom should make filling sateens, which require 25 spindles per loom, this style would be penalized because the looms could not take care of all the yarn and it would be necessary to shut down part of the spinning. On the other hand, if this mill should make a ratine weave which requires many pounds of coarse yarns per loom week, this style also would be penalized because the mill could not produce enough yarn to operate all their looms.

If either of these assumptions should be carried out, the abnormal costs estimated by this method would actually obtain, but the fallacy of this system is very evident when we consider that the mill will probably never put all the looms on any one style, and if it does there is no longer any need for a cost system. It is possible to have the mill perfectly balanced when part of the looms are on each of several quite different styles, although any one of them alone would throw the plant seriously out of balance and cause abnormally high costs.

Overhead as a Percentage on Direct Labor. Several books have been written advocating the distribution of overhead as a percentage of direct labor. The method is easy to use but is inaccurate and misleading for textile mills. A little reflection on the part of any mill man will convince him that there is no uniform relation between the labor cost in each department and the value of the machinery in that department, or the power it requires. Both of these items affect the share of overhead, which should be charged to a department.

Just how far an average percentage

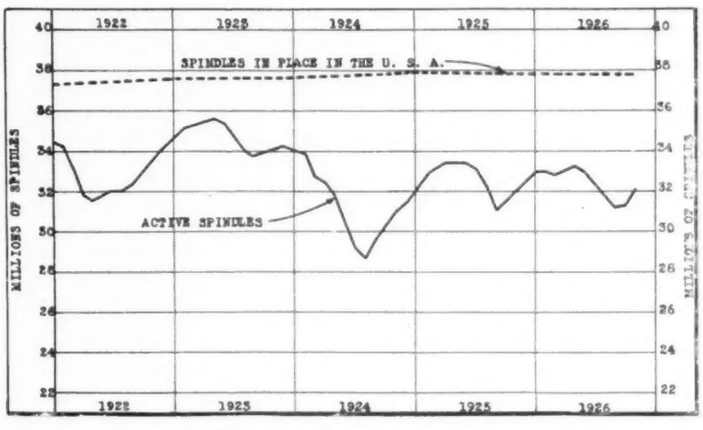


Chart A. Number of Cotton Spindles Installed and Active Spindles

for overhead distribution on the basis of direct labor may depart from the truth may best be shown by the following study, based on several mills which have accurate cost records and a proper division of overhead between departments.

By dividing the total overhead by the total direct labor in these mills, we find that the overhead proves to be about 78 per cent of the direct labor. After apportioning the overhead to each department upon an equitable basis, and then dividing each department's share by the direct labor in that department, we have the following results: Picking, carding and drawing, overhead was 172% of direct labor; roving frames, overhead was 84% of direct labor; spinning, overhead was 134% of direct labor; spooling and warping, overhead was 24% of direct labor; weaving, overhead was 44% of direct labor; cloth room, overhead was 68% of direct labor.

Reliable Results Inexpensive

Other short cut methods are occasionally encountered but they are usually modifications of some of the above. None of them can be depended upon if the mill has a diversified product. It is hard to understand why textile mills attempt to develop short cut methods when reliable results can be gotten by a modern cost system without adding clerical help inside the plant. A part of the time of one clerk in the office should be sufficient to operate and maintain an adequate cost system in most textile plants.

That the proper distribution of overhead is not unduly complicated nor difficult to understand may be shown by considering several typical items.

Property Taxes are distributed upon the value of land, buildings, and machinery used by each department.

Fire Insurance on buildings and machinery is distributed upon the value of buildings and machinery.

Liability Insurance upon the payrolls of departments, and *Power Cost* upon the horse power required by each department.

Similarly, for nearly every item of overhead there is a reasonable basis for its distribution, so that each department shall bear its proper share and reliable cost figures be obtained on each of the finished products.

Costs Based on Production

Although an adequate distribution of the overhead is absolutely essential for an accurate cost system, this in itself is not a guarantee that the system can perform its double duties under all conditions. A great many of the operating expenses in any textile mill are fixed charges which the mill must meet in full even when idle. As an example of these we might mention insurance, taxes, depreciation, salaries, etc. If during a period of curtailment the full amount of these fixed charges is distributed over the reduced production, the resulting cost figures will mount so rapidly as to lose all value for sales purposes. The accompanying chart, which is based upon an actual case, clearly illustrates this point. (See Chart B)

Cost figures which absorb all charges during periods of partial operation may prevent an agent from securing orders which would prove very profitable under normal operation. It is, therefore, important that cost figures used for sales purposes should be based upon the proper percentage of operation.

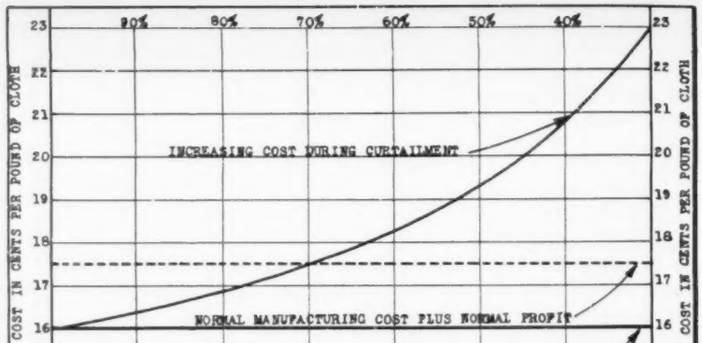

INCREASING COST DURING CURTAILMENT
NORMAL MANUFACTURING COST PLUS NORMAL PROFIT
NORMAL MANUFACTURING COST 16¢ PER POUND
MANUFACTURING COST IN CENTS PER POUND OF CLOTH

Chart B. Showing How Costs Increase When Production Is Curtailed

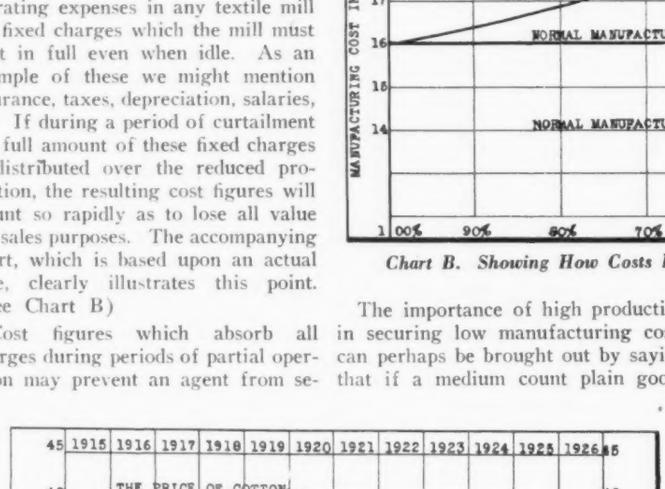


Chart C. American Cotton Crops and Cotton Prices

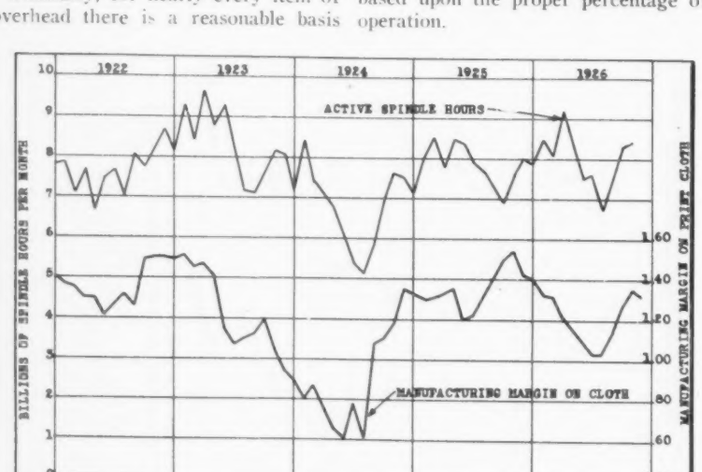

ACTIVE SPINDLE HOURS
MANUFACTURING MARGIN ON CLOTH
BILLIONS OF SPINDLE HOURS PER MONTH
MANUFACTURING MARGIN ON PRINT CLOTH

Chart D. Showing Tendency for Manufacturing Margin to Decrease Following Increased Production

The importance of high production in securing low manufacturing costs can perhaps be brought out by saying that if a medium count plain goods mill increases its production seven per cent through greater efficiency, this will reduce manufacturing costs enough to cover all their bills for bobbins, shuttles, reeds, harness, starch, teaming, oil, belting and for covering the rolls.

Excessive Production

Manufacturers who have seen the effect of low production or curtailment upon their profits and their manufacturing costs are quite apt to go to the other extreme. Many of them have organized night shifts, paying a premium for labor and getting lower efficiency on night work. This practice became quite general during and since the war period, with the result that the markets could not possibly absorb the extra product, and total profits have been much less on two shifts than they would be with all mills on one shift.

Their present position is quite similar to that of the cotton growers this year. The direct effect of excessive production upon selling prices of cotton is illustrated by Chart C.

Chart D shows a similar relation between the spindle hours operated and the margin between the cost of cotton and the selling price of cloth. This chart shows clearly the tendency for manufacturing margin to reduce following a period of increased production. For example: Each time during the last five years when the activity of the textile industry has exceeded eight billion spindle hours per month, as shown in Chart D, this activity has been followed by a decline in the manufacturing margin on staple cotton goods.

It will be interesting in this connection to compare Charts A and D, which show that throughout 1925 and 1926 over four million of the spindles in place were idle, yet the activity in the industry exceeded eight billion spindle hours per month in each of these years.

If the Textile Institute can arouse the mill managers to an appreciation of the necessity for balancing the supply of textile products with the demands of the markets, they will confer a great benefit not only on the textile industry but upon the whole country. Certainly the Institute deserves to have the whole hearted support of the entire industry.

Looking Forward to a Prosperous Year

By B. W. Thayer

Vice-President, Minneapolis (Minn.) Knitting Works

We believe that present conditions make for a very healthy situation, and consequently we are looking forward to a prosperous year.

Cotton has reacted to a higher level since Jan. 1, and we believe that the general market in textiles will strengthen rather than weaken. This will make for a greater interest on the part of buyers. We do not look for much forward buying however, as the retailer is firmly convinced that present method of frequent buying, making for maximum turnover, is safest and best. We are in accord with his views and plan to render a service which this policy demands.

A New Yardstick for the Cotton Industry

Active Spindle Hours Per Active Spindle the Most Reliable Unit of Measurement—The "Spindle in Place" Inaccurate and Misleading as a Factor—New Unit Makes Available a Reliable Index of Activity —Gives Altered Rank to Spinning Countries and States

By Charles H. Clark

The reasons why the number of spindles reported installed, or "spindles in place," are an inaccurate and misleading measure of the size and productive capacity of the cotton industry, are explained herein and a more accurate and reliable unit of measurement is suggested.

When this more accurate unit, or yardstick, is utilized it discloses facts regarding rank and leadership of cotton spinning countries of the world, and of sections and states of this country, that are contrary to general opinion. It proves, for instance, that the United States, and not Great Britain, holds premier position in size and activity among cotton spinning countries of the world; that the cotton growing states of this country have led New England for some years, and that North Carolina, and not Massachusetts, is the country's leading cotton spinning state.

Because several other factors than cotton spinning capacity are determinants of the real leadership of countries, sections and states in cotton manufacturing, the disclosure of their relative size that is made possible by this new yardstick is admittedly of less importance than the fact that it makes possible the development of a series of relative numbers, or indices, that may be utilized to compare with approximate accuracy the activity of the industry in this country and the activity trend by sections and states.

Because the suggested use of this new yardstick attacks the accuracy of a unit that has been used since the early days of the industry, and recently with but little thought of its character, and because of the wide variation in the character of world statistics available, it becomes unfortunately necessary to explain in some detail how the present unit came to be accepted universally and to analyze the character and present use of available statistics.

FROM the earliest days of the cotton spinning industry the comparative size and importance of mills, of states and of countries have been calculated by an arbitrary unit of measurement known as the spindle. For the first 50 or 75 years of the industry's development this was an approximately accurate and convenient unit for such measurement. During that period most mills were equipped with mule spindles; when the throstle frame was introduced the production per spindle for the same counts of yarn was not sufficiently greater than that of the mule to render the spindle an inaccurate basis of comparison; even with the advent of the ring frame it was some years before its production became so efficient as to render the spindle basis of comparison with mules seriously inaccurate. Eventually cotton textile statisticians found it necessary to allow for the difference in productivity of mule and ring spindles in estimating cotton consumption and production, but in estimations of size and importance of cotton spinning states and countries it has been customary to overlook this difference.

New Spindle Factors

During the last 50 years or so the value of the spindle as a unit of measurement of the size or productive capacity of the world industry, and particularly for comparative purposes, has been rendered grossly inaccurate by the increasingly varied character of equipment in different states and countries, as well as by the variation in normal hours of their operation. As the industry advanced toward maturity such factors as partial or complete obsolescence began to play an important part; a considerable proportion of the spindles of any country was always idle; the relative productive capacity of ring and mule spindles became a more important factor; the wide variation in operating hours as between different states and countries played an increasingly important part. In other words, the spindle was no longer a spindle for reasonably accurate comparative purposes in the sense that it was during the early years of the industry. It was generally recognized by statisticians as being a highly accurate unit of comparison, yet for want of the data that would make possible for all states and countries the development of a more accurate unit of comparison it has been customary to continue to base upon this inaccurate unit comparisons of size, importance and productive capacity of the different cotton spinning countries and states.

The economic changes wrought by the world war tended to accentuate the inaccuracy of the spindle unit by an increase in permanently obsolete and inactive machinery, by wider variations in operating hours as between different countries, and by the dislocation of the industry in this and foreign countries resulting from its partial transfer from high cost producing sections to lower cost sections and countries. Ours was the first country to take cognizance of these changes in a systematic statistical way, and the Bureau of the Census commenced in September, 1921 and has since maintained the collation of statistics showing active spindles, as well as "spindles in place" by states, and the number of "spindle hours" operated during each month. Here for the first time was differentiation between active and idle spindles and the development of a unit of comparison which, if made available in all of the cotton spinning countries of the world, would show in an approximately accurate way their relative size and activity during any given period.

Foreign Statistics Approximations

About the same time the International Federation of Master Cotton Spinners' and Manufacturers' Associations, which for many years had been compiling half yearly international statistics of cotton consumptions, stocks and spindleage, inaugurated for reporting countries what they termed a "short-time tabulation." This was started "in view of the continued lack of business in the cotton industry in the several countries of the world." The short time tabulation showed for each country the number of weeks of 48 hours during which their total number of spindles were stopped; but the number of spindles in each country for which it was compiled were only those from which returns were received, and for all of the countries covered the number of spindles reporting have averaged from around 15% to a little less than 10% of the estimated total number of spindles in place. "Short time tabulation" is also defective for purposes of comparison with activity reports of this country because they make no allowance for holidays and do not give the actual number of days that the spindles were operated, nor total active spindle hours. They make possible a very rough estimate of total active spindle hours for reporting countries in any given year, but that is all. For instance, the report for Great Britain for the year ended July 31, 1924 showed stoppage of 12.29 weeks of 48 hours each for approximately 56,750,000 spindles, of which 43,560,000 were mule and 13,100,000 ring spindles; but this was stoppage of normal running time and did not include deductions for holidays. For the same year Japan was credited with short time amounting to 18.17 weeks of 48 hours each for approximately 4,825,000 spindles of which 18,000 were mule spindles; but the normal working week in Japanese cotton mills is one of 120 hours, which means that the short time expressed in Japanese working weeks was only a little over seven weeks.

Shortcomings of Census Figures

While the foreign figures for active spindle hours are only rough approximations, and at that are available only half yearly, it must be admitted that, while the figures compiled by the U. S. Bureau of the Census are available monthly and are based on the country's total spindleage for any given month, they are also only approximations in certain rather important details. For instance, the most important set of figures in these reports, or "active spindle hours" for each state by months, is not the total hours that the actual number of active spindles were operated, but is the product of the maximum number of spindles that "were operated at some time during the month" by each mill and the total number of hours that the spindles in each of these mills were operated during the month. It produces invariably a total number of active spindle hours in excess of those actually operated.

For instance, if a mill has 100,000 spindles and at some time during the month, even though it may be only for a day or a week, these 100,000 spindles are operated, then 100,000 multiplied by the number of hours that the spinning in this mill was operated during the month gives the reported number of active spindle hours. Possibly it is as close an approximation to the actual figures as could be obtained through the medium of questionnaires and mail reports and without the large expense that would be involved if the Census Bureau should oblige the mills to keep accurate records, or have their reports collected by travelling representatives of the Bureau. Under normal conditions and through the operation of the law of averages probably it produces figures as accurate as may be necessary for comparative purposes, but it does not give as satisfactory a basis for comparison by states as is desirable under the increasingly varied percentage of activity that has characterized northern and southern cotton manufacturing during the last few years. For instance, if we desire to obtain the actual number of hours per active spindle that mills in North Carolina and Massachusetts were operated during any given month the available

figures do not afford a close approximation. This is a matter of vital importance as affecting the trend and future location of the industry and will be referred to again.

A Serious Inaccuracy

Another feature of these monthly reports of the activity in the cotton spinning industry that allows inaccurate interpretation is the unwarranted emphasis that is given to "average active spindle hours per spindle in place." The prominence given to this column of figures in the monthly reports allows the interpretation that the Bureau of the Census considers these figures a reliable index of the comparative activity of the industry. They are capable of being interpreted as indicating the Census Bureau's belief that the percentage that these figures are of the total number of spindles in place multiplied by the maximum number of legal working hours for any given month represents the current activity of the industry. As an actual fact, however, the number of spindles in place in this and in any other country is of little or no value as indicating the size or potential capacity of the industry. Even during the most active world war period, or during the boom of 1919-20, there probably was an average of more than one million spindles that were always idle from one cause or another in this country. At no time since the cotton spinning activity reports were inaugurated by the Bureau of the Census in September, 1921, have spindles reported as active at some time during the month approached within two million spindles of the number reported in place. The margin between "active spindles" and "spindles in place" has widened steadily since then, has been close to six million at times, and has averaged over four million during the last two or three years. The reasons for this tendency have been referred to before and will be mentioned in more detail in another paragraph.

It is of some interest to note in this connection that when the Census Bureau's cotton spinning activity reports were started the average active spindle hours per spindle were computed on "active spindles" and not upon "spindles in place," and it seems unfortunate that any change should have been made unless it were possible to develop as a basis of maximum spindle capacity, or 100% for the industry, figures that were more approximately accurate, say the theoretical maximum spindle hours for any state and for the whole country. Such a theoretical maximum would necessarily have to take cognizance of spindles permanently idle and of increases and decreases in legal working hours of the various states.

Having analyzed the statistical matter available for comparing size and activity of the cotton spinning industry in this and foreign countries, and having taken cognizance of its shortcomings, it is now possible to consider the development of the most accurate available yardstick for measuring size and activity of the industry in various countries and in the various cotton spinning states of this country. It is safe to assume that it will be generally agreed that "average active spindle hours per active spindle" is the closest approximation to this ideal that is available.

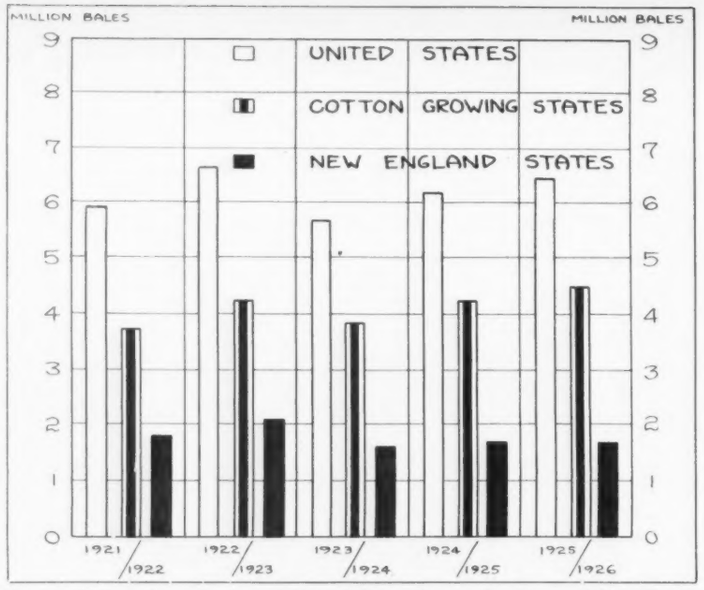


Chart 1—Cotton Consumption of United States Cotton Growing and New England States

Some Comparable Units

"Spindles in place" as a unit of measurement has much the same relation to "active spindle hours per spindles in place" as does 33,000 pounds to the unit H. P.; both represent latent energy that may or may not become active. As indices of the activity and producing capacity of the industry spindles must move and those that are inoperative for any given period are valueless in such a unit of measurement. The H. P., or 33,000 pounds lifted one foot in one minute, is a unit of three dimensions, involving weight, distance and time, and represents a certain degree of activity and a certain amount of power produced; "active spindle hours per active spindle in place" is a unit of only two dimensions and expresses only a certain degree of activity and not the amount of work produced, but the two units are sufficiently similar to emphasize the inadequacy and inaccuracy of "spindles in place," as a factor of the cotton industry unit or yardstick.

While it would be highly desirable to have an index for the cotton industry which, like the H. P. or kilo-watt-hour, could be used for the measurement of actual work performed, and while it would be quite possible to develop such a unit, it would be useless to make the attempt at present because of the lack of the needed data. It would require, in addition to statistics of active spindle hours and active spindles, data of yarn production for the same periods by counts and pounds and a factor that would reduce the latter to a comparable basis. It is mentioned only as a matter of interest, and not with the idea that manufacturers are likely to be burdened by a demand for extension of government reports that would make such statistics available.

The Unit as a Measure of Activity

While it may be agreed by statisticians that the average of active spindle hours per active spindle for some recent period of maximum activity is the fairest measure of the size of the cotton spinning industry by countries, sections and states, it may not be so readily agreed that the same unit is the most logical and accurate available measure of their percentage capacity. Nevertheless assuming the correctness of our showing of the inaccuracy of "spindles in place" as reported by the Bureau of the Census, then they are as valueless and misleading for use as indicating maximum capacity of the industry as for showing its size.

The only regularly published figures assuming to give percentage activity of the industry in whole or in part are based upon "spindles in place," instead of upon "active spindles" as reflecting maximum productive capacity. These are the monthly reports of the Department of Commerce in "Survey of Current Business" showing "ratio to capacity;" of the National Association of Cotton Manufacturers showing "percentage of capacity" of certain New England and southern states with full-time assumed for convenience to be 48 hours weekly, and those of the Merchants National Bank, Boston, for "percentage activity of cotton mills." It may be noted, also, that while these

A Typical Census Bureau Report of Cotton Spinning Activity

WASHINGTON, D. C., DECEMBER 21, 1926.—The Department of Commerce announces that according to preliminary figures 37,426,048 cotton spinning spindles were in place in the United States on November 30, 1926, of which 32,586,770 were operated at some time during the month, compared with 32,592,806 for October, 32,134,682 for September, 31,321,936 for August, 31,082,482 for July, 31,770,900 for June and 32,912,732 for November, 1925.

The aggregate number of active spindle hours reported for the month was 8,480,410,447. During November the normal time of operation was 25½ days (allowance being made for the observance of Thanksgiving Day in some localities) compared with 25¾ for October, 25½ for September, 26 for August, 26 for July, and 26 for June. Based on an activity of 8.78 hours per day the average number of spindles operated during November was 37,877,576 or at 101.2 per cent capacity on a single shift basis. This percentage compares with 98.9 for October, 98.5 for September, 87.4 for August, 78.9 for July, 88.4 for June, and 95.9 for November, 1925. The average number of active spindle hours per spindle in place for the month was 227.

The total number of cotton spinning spindles in place, the number active, the number of active spindle hours and the average spindle hours per spindle in place, by states, are shown in the following statement:

State	Spinning spindles		Active spindle hours for November	
	In place November 30	Average during November	Total	Average per spindle in place
United States	37,426,048	32,586,770	8,480,410,447	227
Cotton growing states	17,931,132	17,391,290	5,500,997,434	307
New England states	17,780,132	13,695,210	2,657,674,743	149
All other States	1,714,784	1,500,270	321,738,270	188
Alabama	1,484,674	1,441,958	428,193,994	232
Connecticut	1,198,308	1,023,982	207,764,303	173
Georgia	2,919,870	2,838,368	857,681,984	294
Maine	1,130,608	941,922	161,839,934	143
Massachusetts	11,352,848	8,418,346	1,638,081,575	144
New Hampshire	1,427,862	1,056,384	228,200,641	160
New Jersey	415,604	389,580	68,642,630	165
New York	885,384	727,358	166,415,521	188
North Carolina	6,106,138	5,888,796	1,950,302,026	319
Pennsylvania	123,172	114,140	23,726,888	193
Rhode Island	2,525,698	2,118,228	396,853,566	157
South Carolina	5,361,386	5,327,986	1,773,937,459	331
Tennessee	571,964	546,734	149,797,370	262
Texas	245,332	229,596	71,647,800	292
Virginia	711,314	685,594	158,005,896	222
All other states	965,886	837,798	199,318,860	206

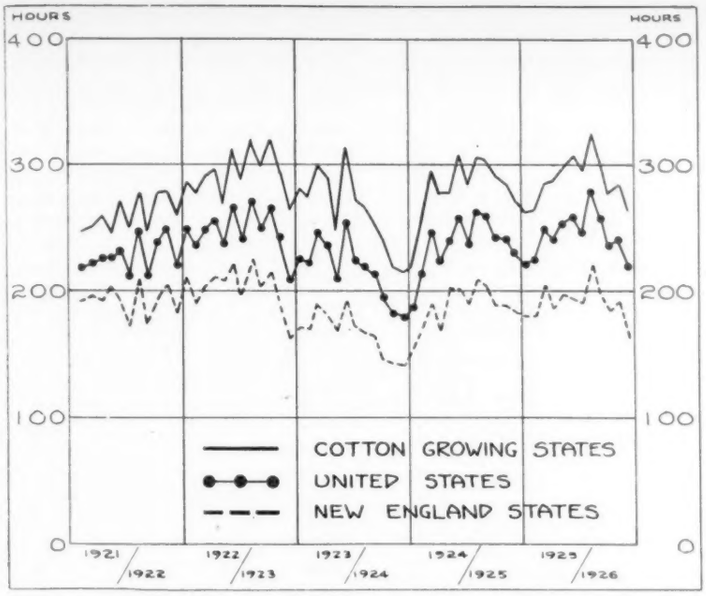


Chart 2—Average Active Spindle Hours Per Active Spindle for United States, Cotton Growing and New England States

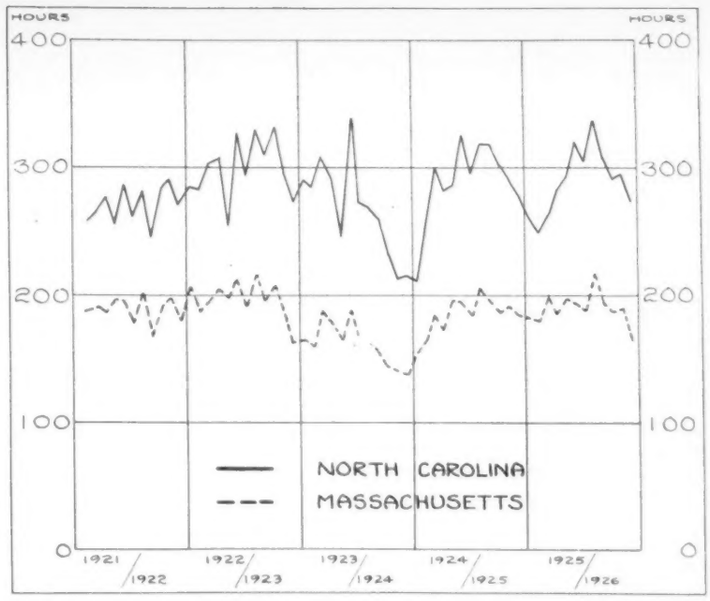


Chart 3—Average Active Spindle Hours Per Active Spindle for North Carolina and Massachusetts

authorities accept "spindles in place" as one factor of their compilations, no two of them agree as to what is a full-time operating basis, and their figures are, therefore, not comparable. The fact is worth emphasizing, however, that each statistician has shown appreciation of the fact that "full-time operation" varies more or less radically in the different states, that any basis determined upon must be an approximation, and that an average for the whole country is inaccurate for any one state. This would appear to suggest that, if determination of what is "full-time operation" for the various states, and of what is the average for the country, can be avoided it would be advisable.

Having drawn attention to the inaccuracy and unreliability of certain available statistical data, to the fact that other basic data of spindleage and its activity are no better than fairly close approximations, and to the further fact that practically all of the attempted interpretations of these statistics heretofore have seemed to exaggerate the inaccuracies of the basis data, it is now our purpose to present constructive suggestions for the utilization and interpretation of the most accurate of the available data that may be used continuously to show size and activity of the industry.

Factors of Spindle-Hour Yardstick

First, we eliminate "spindles in place" as being too misleading to be of service in any particular. Second, we accept as the most reliable data the monthly reports of active spindle hours and active spindles of the Bureau of the Census, and reduce them to "active spindle hours per spindle active" with the conviction that there will be little appreciable variation in the percentage of inaccuracies from month to month and year to year, thus rendering them approximately accurate for comparative purposes. Chart 2 shows the results graphically by cotton seasons since August, 1921, for the country, the cotton and the New England states, and Chart 3 for North Carolina and Massachusetts. The reason for such grouping will become apparent later on.

The figures are charted according to cotton seasons, not only because they are thus compiled by the Bureau of the Census, but because activity of the industry is closely related to cotton consumption, and figures for the latter are compiled for the seasons, instead of for calendar years.

Third, the "average spindle hours per active spindle for the eleven months from Sept., 1921, to July, 1922, inclusive," was chosen as the base (100) of a series of relatives, or index numbers, for the country and for the sections and states noted for two reasons: First, while reference of the relatives to some year or period of normal, or maximum, or minimum activity might be desirable, there is likely to be a reasonable difference of opinion as to which these may be, and the chief value of relatives is for comparative purposes and to show trends, and one year is as good as another for these purposes. Covering, as do these figures, the reports from date of initiation it is possible for anyone by simple calculations to take any other year or period as a base and refer the relatives to that. Second, the year 1921-22 was the first since the world war of comparative normalcy and the calendar year 1921 is used by the TEXTILE WORLD Analyist and by other statisticians as the base (100) for textile price indices.

The relatives, or index numbers, for the whole country, the cotton states and the New England states, figured month by month since August, 1921, as a percentage of the average spindle hours per active spindle for the United States from Sept., 1921, to July, 1922, inclusive, are shown graphically in Chart 4, and those for North Carolina and Massachusetts in Chart 5, while the comparative figures by quarters are shown in Table 1. It may be of interest to compare these charted relatives with Charts 2 and 3 showing average spindle hours per active spindle and note the close similarity. Each shows the same trends, but the latter require rather laborious computations to give increase or decrease of the different groups as compared with the base, and to give percentage increase or decrease of the different groups from one period to another. The relatives give these almost at a glance.

Distortions of "Spindles in Place"

Before attempting to interpret the most evident and significant features of the chart of active-spindle-hour relatives let us compare this with "average active spindle hours per spindle in place" as shown in Chart 6. Remembering that in the development of the latter chart the same "active spindle hours" are used as in Chart 4, but that the figures for "spindles in place" are

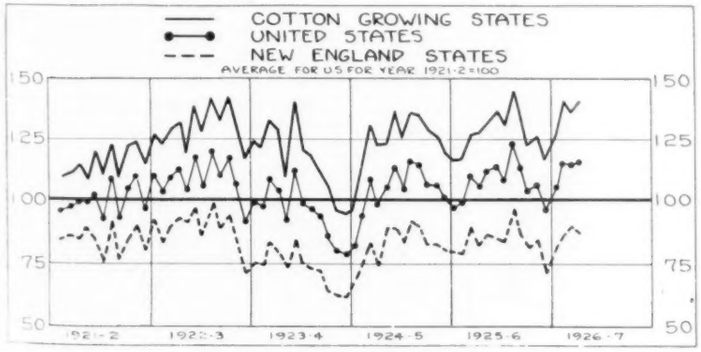


Chart 4—Relatives of Cotton Manufacturing Activity, Average of Active Spindle Hours Per Active Spindle for 1921–22, or 226 = 100

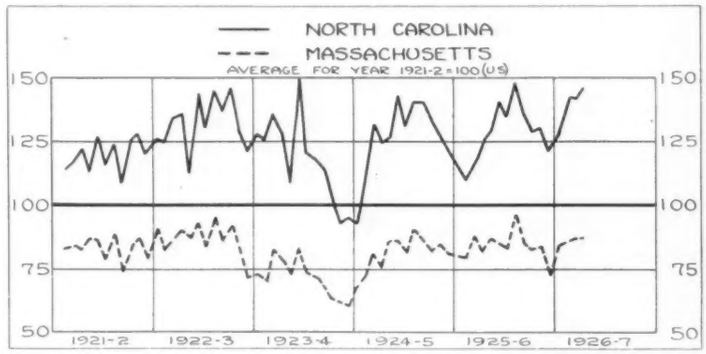


Chart 5—Relatives of Cotton Manufacturing Activity for North Carolina and Massachusetts, Based on 226 = 100 for United States for 1921–22

considerably larger and more constant for the three curves than those of "active spindles," and that the "average active spindle hours per spindle in place" for the base year was considerably lower than the average for "spindles active" (202 as compared with 226), the following differences or distortions of Chart 6 will be better understood: Greatly accentuated peaks and valleys in the three curves, thus exaggerating the actual unbalanced condition of the industry; the curve for the cotton growing states raised an average of about 15% above that in Chart 4, and that for the New England states lowered about the same amount, excepting during the season of 1922-23 when active spindles approximated most closely to spindles in place for that section, and the distortions of the curve for the whole country being an approximate average of those for its two principal sections; trend lines changed very materially, particularly for the first two years charted. It will be readily appreciated that if curves for North Carolina and Massachusetts had been charted similarly the distortions would be much more radical.

It is true that, if moving averages for spindles and active spindle hours were used for both charts, there would be an appreciable flattening out of the curves but they would still maintain their relative differences throughout.

The chart based upon "active spindles" as a factor is history—a record of what actually occurred to the extent that data available was accurate or approximate. The chart based upon "spindles in place" as a factor is pure fiction; it deals with imaginary conditions to the extent that it is distorted by use of "spindles in place." "Spindles in place" are not a measure of the potential capacity, or maximum activity, of the industry. It would be just as accurate to base the transporting capacity of automobiles and automobile trucks upon those that are in active use, those that are second-hand and held for sale, those that are obsolescent and those that have been junked.

As the chief value of these charts is for showing activity trends, and for comparison of trends and of percentage activity shown by the different curves, it must be evident that the introduction of one factor that always has a large element of inactivity must produce distorted and misleading results. For the cotton growing states we have such a factor for both charts in the possible wide variation in active hours, and this unavoidable variation is compounded for those states and for the United States curve when "spindles in place" are substituted for "active spindles."

Base a Normal for Recent Years

Before attempting to evaluate the information that may be derived from the charted relatives of "average active spindle hours per spindle active" referred to the average for 1921-22 as a base, it may be of some interest to know that the average for the three years ended with July, 1926, was almost identical with that used as our base. This affords additional justification for this base, and might warrant the acceptance of such an average as a normal, although we may still hope that experience of the next five years may prove that 1922-23 is a more accurate normal of activity. It may be well at this point, however, to emphasize the fact that the base (100) adopted for a series of relatives or index numbers is their least important factor, provided it is not abnormal.

It is claimed for the relatives of "average active spindle hours per active spindle," based upon the average for 1921-22, as shown graphically in Charts 4 and 5, that they are the most accurate representation available of the industry's activity for the whole country and the sections and states charted, and for comparing the activity of these sections and states. That they show activity trends is self-evident. They show also percentage differences in the relatives of any month for the country and the sections and states charted. Thus, in January, 1924, there was a sudden increase in activity that reached a peak for the whole industry at 112, for the New England states at 86, and for the southern states at 138. Then there was a steady sag in activity until August, when a low for the industry was touched at 83, for New England at 68, and for the southern states at 97. The percentage advances were as follows: United States, 19%; New England states, 10%; southern states, 27%. The subsequent percentage declines were as follows: United States, 29%; New England states, 18%; southern states, 41%.

Now glance at Chart 5 showing the relatives for North Carolina and Massachusetts. Other than the much greater size and average activity of the industry in North Carolina, what important facts regarding the status of the industry in these states for the period charted are disclosed, particularly since 1922-23? Are they not the abnormally high peaks and low valleys in the North Carolina line, reflecting a highly unstable economic condition, and in the Massachusetts line much lower peaks and shallower valleys with a tendency toward a flatter line and a more stable economic status? The same conditions are reflected quite as accurately in Charts 2 and 3, and the difference in "average active spindle hours per active spindle" are there shown in actual figures and not by percentages.

If it be true, as is generally agreed by business men as well as by economists, that a balanced status of industrial activity, employment, production and distribution is desirable, then is it not evident that the unstable condition of the industry in this country since 1922, as shown by these charts, is traceable to the much more unstable status of the industry in the cotton growing states, and that the latter has been counteracted to a certain extent by the more stable operation of the industry in the New England states?

Is there not conclusive evidence here of the generally accepted fact that the productive capacity of the industry is considerably in excess of normal consuming demand? But what is more important, and not so generally understood, is there not conclusive evidence here that the productive capacity of the cotton growing states is much greater than that of the New England states, and is much more flexible and capable of greater expansion? It is a case in the later section of possible active hours being restricted closely to a single shift with no chance of expansion in times of active demand except by increasing the number of spindles active. In the cotton growing states, on the other hand, "spindles normally active" approach so close to "spindles in place" that there is only moderate opportunity of their increasing active spindle hours, although at times it has such opportunity to almost as great a degree as New England, and, in addition, has no limit to the overtime operation of its machinery except in the number of operatives available. The charts show that a southern spindle normally averages approximately 50 per cent more active spindle hours than a New England spindle, and the variation in their average activity, as demonstrated by Chart 4, may be from a low of 97 in August, 1924, to a peak of 144 in March, 1921, or a variation of 47%;

TABLE 1—INDEX OF COTTON MANUFACTURING ACTIVITY
Based Upon Average of Active Spindle Hours Per Active Spindle for Period September, 1921, to July, 1922
226 = 100

1921–22	United States	Cotton growing states	New England	Massachusetts	North Carolina
November	99	115	84	81	121
February	93	110	77	77	115
May	105	121	87	84	125
1922–23					
August	109	125	94	92	125
November	111	131	93	90	135
February	106	126	87	85	130
May	116	141	95	92	146
1923–24					
August	100	125	76	74	128
November	104	127	81	79	129
February	99	120	77	74	121
May	86	105	65	63	102
1924–25					
August	83	97	68	68	93
November	99	121	75	75	124
February	104	124	84	81	131
May	106	127	83	81	133
1925–26					
August	98	115	80	80	116
September	100	116	80	79	111
October	109	125	90	88	117
November	105	126	82	81	125
December	111	131	88	87	130
January	113	136	86	84	142
February	108	130	85	83	135
March	122	144	97	96	149
April	112	134	87	85	136
May	103	121	82	83	129
June	106	124	84	84	130
July	96	116	73	73	121
1926–27					
August	106	127	81	83	127
September	114	140	85	85	143
October	114	136	88	86	142
November	115	140	86	86	146

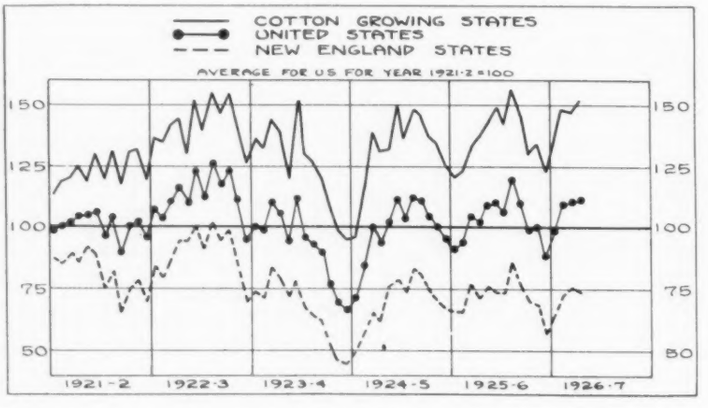


Chart 6—Illustrates Distortions of Relatives Due to Use of "Spindles in Place" Instead of "Active Spindles." Based on 202 = 100 for U. S. for 1921–22

and, of course, a much greater spindle hour activity is possible.

Spindles in Place and Active

Chart 7 shows the spread between average spindles reported active and in place for the cotton seasons from 1921-22 to 1925-26 inclusive, and it may be stated that, while the percentage basis tends to give an exaggerated picture, this exaggeration is minimized by the use of yearly averages. The percentage and actual averages are shown in the following tables:

TABLE 2—SPINDLES IN PLACE AND ACTIVE YEARLY AVERAGES (.000 Omitted)

	United States		Cotton Growing States		New England	
	In Place	Active	In Place	Active	In Place	Active
1921–2	36,835	32,888	16,026	15,561	18,646	15,679
1922–3	37,229	34,610	16,247	15,916	18,818	16,774
1923–4	37,671	32,405	16,842	16,002	18,797	14,729
1924–5	37,851	32,076	17,406	16,603	18,478	13,875
1925–6	37,806	32,268	17,774	17,019	18,154	13,747

TABLE 3—PERCENTAGE OF INACTIVE SPINDLES IN PLACE.

	United States	Cotton Growing States	New England
1921–2	10.7%	2.9%	15.9%
1922–3	7.0%	2.0%	10.3%
1923–4	13.8%	5.0%	21.5%
1924–5	15.3%	4.6%	24.9%
1925–6	14.7%	4.2%	24.3%

This chart and its accompanying figures show very clearly the substantial increase in inactive spindles in the cotton growing states since 1922-23, and the much greater increase in New England. Combine this chart with another showing the difference between average active spindle hours for the same period and legal maximum spindle hours and there would be produced a fairly accurate picture of the factors resonsible for the unstable and economically inefficient status of the industry. Lacking the latter figures it is possible to obtain a practical view of the wide variation in active spindle hours by sections and by two typical states in Chart 8. The average active spindle hours per active spindle for the United States are shown by the black base line, while those for New England and Massachusetts are shown below the line and for the cotton growing states and North Carolina above the base line. It shows that the average annual variation and trend both North and South are about the same, but it eliminates the abnormal peaks and valleys of frequent activity and depression that are brought out so clearly in the chart of relatives by months.

The most important features disclosed by the application to the industry of this yardstick or unit of measurement of activity and size have been described and charted, and that about completes the functions of a statistical analysis. If it is decided that the abnormalities and unbalanced economic condition shown are correctly reflected, and if remedies are available to produce a more balanced activity and higher average prosperity then it is for manufacturers to decide whether they shall be applied. It is essentially a problem for cooperative solution, and the industry has such a cooperative body in the Cotton-Textile Institute.

As a Measure of Industry's Size

The statistical argument for the use of "spindles in place" as a measure of the size of the cotton spinning industry and for determining percentage of activity of the industry as a whole, is that they represent "potential capacity." The opinion of a leading statistical authority is as follows: "It would seem incorrect to ignore the existence of some four million spindles which are potential factors in the industry, even though idle continuously throughout the month, in computing the average active hours per spindle, or the percentage of activity for the industry as a whole."

If this theory has not been sufficiently exploded then it may be advisable to take a census of the actual status of spindles inactive. The exact status of numerous mills might be mentioned to prove the fallacy of the "spindle in place" theory but they would be merely a duplication of one that may be instanced: A New England mill that has been idle for some two months and that is credited with a total of 230,000 spindles, all of which presumably have been reported as "spindles in place," will never operate more than 55,000 of these spindles again, and of the balance of 175,000 spindles practiaclly all will be junked; it is possible that a few may go South, and if they do their potential capacity will be increased by at least 50% and possibly much more. It is a very conservative estimate that at least two million of the spindles inactive during the last two or three years will never be operated again, and the future potential capacity of at least one million more of these "spindles in place" that have averaged to be inactive is a matter of pure guesswork.

Assuming that "active spindle hours," or the "average active spindle hours per spindle active," for any given period is the most accurate unit of measurement of the size of the cotton industry, then thus measured the cotton growing states have led New England by a wide margin ever since data for active spindle hours has been compiled by the Bureau of the Census. In fact, they have led all other states combined for this period. Massachusetts was passed by North Carolina two years ago and the lead was increased to a little over one billion active spindle hours last season. The use of this unit of measurement for the other states will show many changes from the list based upon "spindles in place." The figures for the cotton growing states, the New England and all other states, and for Massachusetts and North Carolina compare as follows:

	Active Spindle Hours				
	1921–22	1922–23	1923–24	1924–25	1925–26
Cotton States...	47,841,112,275	55,776,192,120	50,598,557,682	55,912,066,688	58,517,714,390
New England..	36,783,239,798	41,271,277,895	30,102,266,868	31,201,214,868	31,541,427,911
All other.....	4,684,261,803	4,883,631,433	3,658,868,497	3,941,333,761	3,881,938,460
Total.....	41,467,501,601	46,154,909,328	33,761,135,365	35,142,548,629	35,423,366,371
North Carolina.	16,423,892,613	19,062,834,757	17,332,650,667	19,606,791,926	19,952,947,406
Massachusetts..	23,102,738,622	25,233,380,970	17,762,675,018	18,666,085,567	18,938,121,787

Figures for Great Britain

Because of the incompleteness of available data for foreign countries any accurate comparison of the size of those cotton industries with that of this country by the use of "active spindle hours," or "average active spindle hours per active spindle" as the unit of measurement is impossible. Conservative estimates, however, based upon such data as is available afford convincing proof that Great Britain lost its premier position as the world's greatest cotton spinning country to the United States when it legalized the 48-hour working week, and particularly since the world war, during which period the American section of its industry has never operated an average of more than 35 hours a week. In calculating approximate statistics of activity for British cotton spindles the semi-annual "short-time tabulation" of the International Cotton Federation will be accepted as authoritative and also the latter's figures for spindles in place.

Due allowance will need to be made for the fact that approximately 75% of the spindles operated by Great Britain are mule spindles, as com-

(*Continued on page 187*)

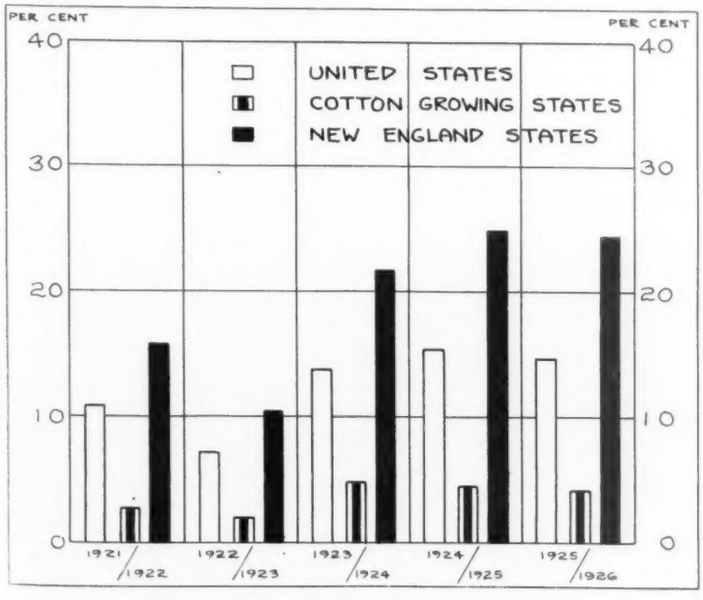


Chart 7—Percentage Difference Between Average of "Spindles in Place" and "Active Spindles" for Each of Last Five Years

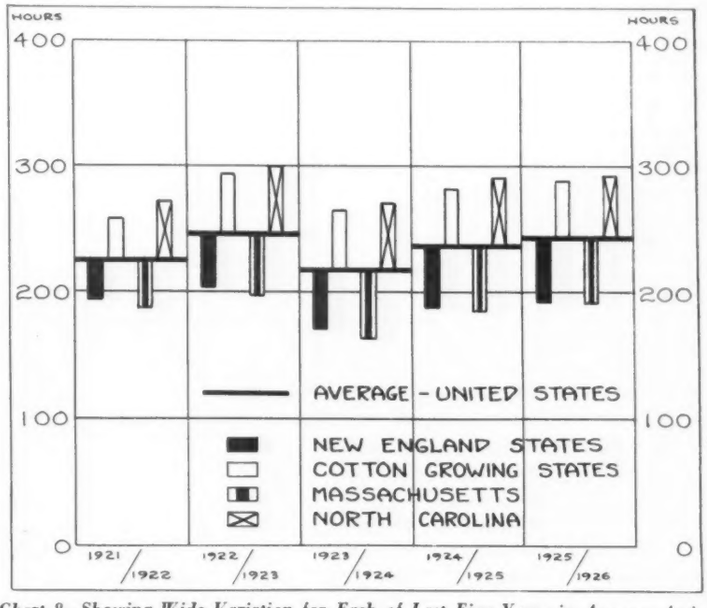


Chart 8—Showing Wide Variation for Each of Last Five Years in Average Active Spindle Hours Per Active Spindle Between New England and Cotton States and Between North Carolina and Massachusetts

Closed Car Industry Now a Major Textile Field

Estimated That 1926's Record Production Utilized 45,000,000 Yards of Upholstery Cloths—Decline in Open Car Use Limits Yardage for Imitation Leather—Plain Fabrics of Broadcloth Type Found in Most Expensive Cars—Good Plush Most Popular

By William B. Dall

EXTRAORDINARY increase in the proportion of closed cars to total passenger car production in the American automobile industry has brought that channel for the distribution of textiles into a new position of importance. The recently announced preliminary figures for 1926 compiled by the National Automobile Chamber of Commerce places the year's production of closed cars at almost three million. A fair average for upholstery fabric consumption per car, including head lining and ceilings, is about 15 yards. The automobile industry therefore took forty five million yards of textiles, chiefly wool and mohair goods, for its closed car upholstery last year, which of course does not include the cotton goods yardage consumed in artificial leather, etc. Popular taste for closed cars indicates that there will be a probable repetition of the 1926 record in 1927.

Closed Car Growth Amazing

The National Automobile Chamber of Commerce places the total motor vehicle production for 1926 (cars and trucks) at 4,480,000, with a total wholesale value of $3,056,950,000. These figures mark gains of about 3% over 1925, and are a new high record for all time. In only three years of its history has the automobile industry failed to show an increase over preceding years. Those three years were 1918, 1921 and 1924, and even in those years closed car production scored gains, so that closed cars by themselves show an unbroken record of expansion.

The fact that the automobile industry produced more than twice the number of passenger cars last year than in 1921, is evidence of growth and prosperity. However the fact that 74% of the 1926 production was made up of closed bodied cars as against a similar figure of only 22% in 1921, is indicative of a pronounced change in character of bodies which brings the automobile upholstery field into the spotlight as one of the major consumers of textiles. In 1926 there were about two and one half times as many automobiles built as in 1919 yet closed cars alone in those eight years show a multiplication by 18½ times.

Pile Versus Flat Fabrics

There are two major classes of fabrics in current use in the interior of automobile bodies, the pile fabric and the flat woven fabric. No statistics appear available to indicate the proportion of each which goes into use. However, observation at the recent automobile show in New York indicates a strong leaning on the part of the makers of the highest priced cars to use fabrics of the broadcloth or kersey type. The medium priced group as a whole uses a good grade of mohair plush, though in this group also will be found various flat woven fabrics. The cheapest types often use a wool-pile, cotton-backed plush, or a cheaper type of plain woven fabric.

The best British practice for some years has been the use of a tightly woven, worsted-face Bedford cord with strong cotton backing, but such fabrics appear only in rare instances in cars made in this country.

Conservative Trend

Despite gaudy use of color on the exterior of car bodies the upholsteries as displayed at the New York show last month were for the most part conservative. It was apparent that a very large percentage were in plain solid colors, and the few that used striped materials did not depart from subdued effects. The colors in use were largely blues and tans.

Broadcloth in High Regard

Style in automobile upholstery varies more gradually than in the clothing trade, but changes occur much for the same reason—when a certain type of fabric becomes typical of mass production, then buyers with more money to spend seek something that is different. Stripes and figured effects have passed through this cycle, and the highest class demand appears to be now for the solid colors. Pile fabrics, excellent as many of them are, are not the outstanding characteristics of the most expensive bodies. Upholstery authorities are agreed on the durability and suitability of mohair plush for upholstery use, as instanced in Pullman sleeper and chair-car practice, but the exclusives are apparently now interested in something that is different so far as their automobiles are concerned, and the heavy broadcloth or kersey is to be found in the most luxurious bodies displayed on such cars as Pierce, Lincoln and Locomobile.

The fabrics just under discussion are those known in the automobile trade as "body cloth," that is, fabrics used for cushions and backs and the lower part of the doors. What is termed the "head lining" is the fabric used for side walls above the belt line and for the ceiling. In modern practice the latter fabrics harmonize very closely with the body cloths, often being of exactly the same color and surface effects, though lighter in weight because not called upon to meet the same wearing stress as the cushions and backs.

The essential qualities for a good automobile upholstery fabric comprise fastness of color to sun and moisture, absence of "crocking," high tensile strength and a lack of affinity for dust.

Upholstery to Last Life of Car

Purchasing agents are watching their upholstery with greater and greater care. Not only is the upholstery material said to be the most expensive single material item that goes into the make-up of a closed body, but it is something to which the general public is giving a higher degree of importance. The average car owner does not mind when the time comes around for the repainting of his car, but he would be quite seriously upset if he found it necessary to do any reupholstering. It seems to be the public assumption that the upholstery shall last the life of the car, and car makers are finding it necessary to conform with this in order to sustain their reputation.

In the last year or so, buyers for body makers have learned the ropes of the market, and they are regarded to be quite as canny in the ways of the trade as those who have been buying woolens for a much longer time. They have, however, been criticised by some sellers as a bit too independent in their attitude toward deliveries, in some cases wanting goods with a rush and in others asking that their delivery be held up for an indefinite period. Habits like these, however, are to be found in many trades and sellers cannot say that they are peculiar to the users of automobile upholstery.

Except in a few convertible models which may be used as closed cars or open ones at the owner's wish and in a few other models designed for business purposes, there is no use of real or artificial leather in closed car upholstery. The outside roof of the body is frequently made of a coated textile fabric, however, the base usually being cotton. There have been experiments in the use of burlap for the base of such materials, but without any general acceptance as yet.

Open Car Production Declines

On the other hand, in open car production there is extensive utilization of coated textiles in the form of artificial leather, not only for upholstery, but also for side curtains and car roofs. Many million yards of cotton goods find their way into use as backing for these materials, but since the manufacture of the open car has been declining over the last four years, this cannot be considered an expanding market for these fabrics.

According to the figures of the National Automobile Chamber of Commerce, 1923 established the highwater mark in the production of open cars, the figure for that year being 2,440,000. In 1924 the open car production declined to 1,845,803, in 1925 it had receded to 1,676,171; while last year the open car production barely topped the million mark with a figure of 1,024,000.

This trend means that despite the enormous growth of the automobile industry there are less than half of the open cars being made today than there were four years ago, the growth having been in the closed car field as outlined above.

Here and there are to be seen efforts to use coated fabrics for the exterior of bodies, both on cars of the sedan type and also in the better type of closed retail delivery trucks. The material is sealed to the outside surface of the body. Novel effects may be produced by this method of finish, but it is to be doubted whether any extensive development lies open for the future along such lines. Fine upholsteries will probably remain the largest item in money value which car builders take from the textile industry.

MORE AND MORE CLOSED CARS

The tremendous increase in the proportion of closed cars to total passenger car production in the United States during the last eight years is emphatically shown in the following table, the basic figures for which were supplied by the National Automobile Chamber of Commerce.

	Car Production.			
	Total passenger cars.	Closed cars.	Per cent. closed to total.	Per cent. increase each year in closed cars.
1926*	3,950,000	2,926,000	74%	+ 79.4%
1925	3,307,302	1,631,131	56%	+ 16.7%
1924	3,243,285	1,397,482	43%	+ 10.8%
1923	3,694,237	1,259,877	34%	+ 76 %
1922	2,406,396	715,028	30%	+113 %
1921	1,514,000	335,000	22%	+ 4.7%
1920	1,883,158	320,136	17%	+ 98 %
1919	1,657,652	161,000	10%	.....

The percentage of closed car production to total passenger car production for 1918 was 7%, for 1917 4%, and for 1915 and 1916 1½%, each year.

*** Estimated.**

JOHNSON & BASSETT, INC.

1870-1927

Manufacturers of Wool Spinning Machinery

WORCESTER, MASS., U. S. A.

WOOLEN MULE

Our experience of 57 years as specialists in the manufacture of Woolen Mules enables us to build a machine capable of turning out the maximum production and one that will give lasting service and satisfaction. No expense is spared in developing and perfecting our machine. Every minute detail is taken care of, the best materials being used and the finest quality of workmanship can be relied on at all times. The final result is a machine which operates with ease and precision.

Construction—Our Mule is very substantially built. The rigid construction of the Mule carriage enables the machine to stand up under the most severe strain. When a long Mule is running at high speed on heavy yarn this is a particularly desirable feature.

The Parts on the Head, Center Mechanism and Quadrant mechanism which are subject to a great strain are of careful design and rigid construction.

It will therefore be seen that the breakage of parts is a very small item and that the cost of upkeep is very low.

A positive cam movement operates the Mule, and motions can only engage at the exact moment of contact. The carriage is rigid and is designed to operate easily with a large number of spindles running at high speed. When the carriage reaches the rolls it stops with precision and stays in position until it again starts from the rolls. Carriage is triple braced with heavy brace rods and cast iron plates which keep carriage in line. The bottom of the carriage is closed up entirely, eliminating accumulations of dust and lint.

The Head and Quadrant mechanism are very substantially constructed, and are assembled on heavy beds. Compound gearing and ball bearing pulleys are important factors, saving power and assuring ease in operation. Gears and shafts, particularly those subject to the greatest strain, are heavily made, to stand high speed and any severe strain.

A double draft scroll which is equipped with a range of scroll extensions, handles all classes of yarn from the finest to the coarsest grades of asbestos and carpet yarns.

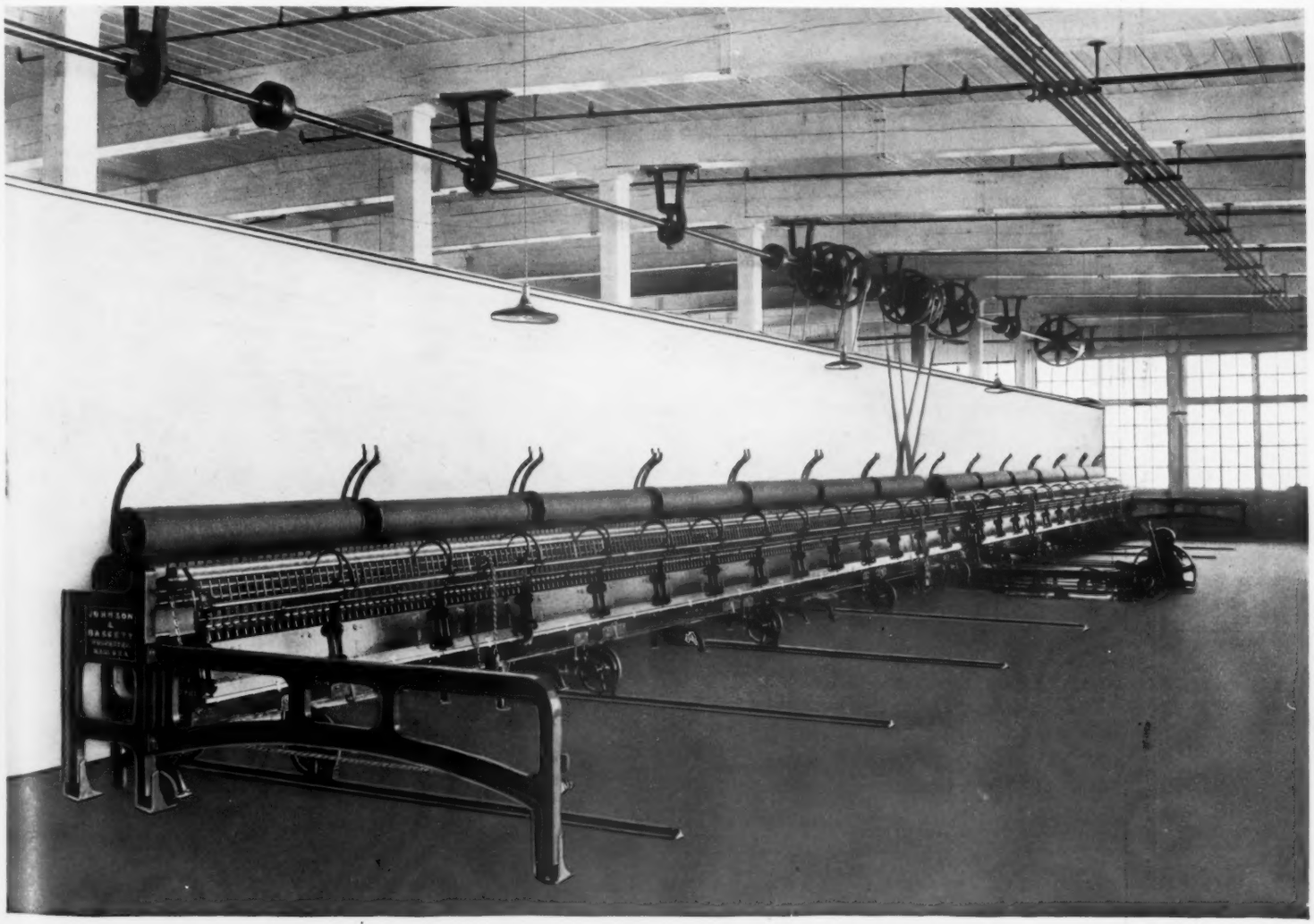
Spindles are of exceptional quality. An entire department is devoted to the manufacture of spindles. The quality of steel used is the best obtainable, and spindles are made with great care as to accuracy of size and perfect alignment. Spindles are designed to run at very high speed.

Mule Changes—We call attention to the simplicity of our Mule when changes are made in the yarns to be spun. This means a great saving in time and a consequent increase in production. We have recently made various changes along these lines which have proved to be very successful.

Service—We are always very glad to cooperate with mills to enable them to secure the most desirable equipment for their particular needs. After an installation of our Mules has been made we follow up our equipment very carefully, consulting with those in charge of our machinery to enable them to obtain the maximum production. This feature is greatly appreciated by the mills and has frequently resulted in a material saving to them.

Pantograph—We manufacture the Improved Dover Pantograph Machine well worth any Engraver's investigation, before purchasing elsewhere.

Catalogs—We have very complete Catalogs and Instruction Books on our machines, which we are always pleased to forward on application.



390 SPINDLE—2¼" GAUGE EXTRA HEAVY PATTERN HIGH SPEED MULE

EXPERIENCE PROGRESS SERVICE

For Over a Century

FOR over a hundred years, A. & A. LAWRENCE, MASON & LAWRENCE, and LAWRENCE & Co. (since 1863) have successfully directed output, guided production, planned and marketed textiles of many different kinds.

A century ago cotton goods were sold from case lots displayed at the COMPANY's counting rooms in Boston, to which buyers flocked and bid for the early products of American textile mills.

Today the salesmen of LAWRENCE & Co. cover the whole of the United States and represent nineteen different departments. Each of these departments specializes in a different kind of textile. Each is expert in its line. Each has its special sales manager and staff.

In addition, through a well organized export department, LAWRENCE & Co. sells these same products through sixty-four different offices and agencies all over the world.

LAWRENCE & CO.

BOSTON NEW YORK CHICAGO SAN FRANCISCO

19 DEPARTMENTS

1. Alpaca Linings
2. Bleached Goods
3. Draperies
4. Fustians, Khaki & Corduroys
5. Ginghams & Robes
6. Hosiery & Underwear
7. Linings
8. Percales & Flannels
9. Print & Grey Cloths
10. Raincoating
11. Sheetings
12. Shoe Goods
13. Toweling, Tire Fabric, Drills, Twills, Grey Cloths, Hose & Belting Duck
14. Velveteen, Velours & Auto Upholstery
15. Wash Goods
16. Wide Sheetings
17. Worsteds — *Cloak & Suit*
18. Worsteds — *Clothing*
19. Worsteds — *Jobbing*

PRODUCING MILLS

PACIFIC MILLS MERRIMACK MFG. CO. IPSWICH MILLS
NEW ENGLAND SOUTHERN MILLS WHITTENTON MFG. CO.

Fine Background for Cotton Goods Improvement

Achievements of 1926 Outrank Any Previous Market Developments—the Institute Becomes a Reality—Better Understanding with Distributors—New Low Prices on Cotton—the Orderly Recession in Face of Break—Spray Goods Trend Has Turned Upward

EXCEPTIONAL elements of progress which entered the cotton goods market during the course of last year have paved the way for prosperity during 1927, which authorities believe will surpass any which the market has experienced since the post war boom. Of course boom conditions are neither expected nor wanted, but steady business with prices on a fairly even keel and a respectable margin of profit are conditions which students of the situation believe they can count upon. Of course these benefits may not come to organizations that are out of tune with the new progressive spirit, and there will continue to be the usual premium upon business acumen and merchandising aggressiveness.

The Institute Achievement

The outstanding accomplishment of last year is the formation of The Cotton Textile Institute. The scattered thought of several years past came to a focal point at the Atlanta meeting of the American Cotton Manufacturers' Association last April. As the result of concrete action taken at that time, the first organization meeting of the Institute was held in New York last June, attended by one of the most representative groups of cotton manufacturers ever assembled. By the middle of October over 20,000,000 out of a possible 30,000,000 spindles, had signed the three-year participation agreement and before the end of the year the Institute's offices were open and its guidance was in the hands of an illustrious president and a finely qualified secretary. All other branches of the textile industry are watching with the keenest interest this supreme demonstration of cooperation.

Born of dire necessity for some contrivance to save the market from headlong and irrational competition, The Cotton-Textile Institute's prime purpose according to those in touch with it, is to analyze and define the factors, conditions and practices which result in over-production or in unprofitable sales. Except for the figures collected by the Association of Cotton Textile Merchants of New York on production, unfilled orders and stocks, which have been compiled for only about two years, the industry has been without knowledge of the relation of its output to consumption. The scope of the Institute is industry-wide and the reports which it is in position to obtain should give a complete and accurate picture. The high intelligence of the executives connected with the Institute is counted upon to interpret this picture correctly and to devise, where necessary, corrective measures. Uniform and properly worked cost systems are essential to restrain cut-throat competition, and the Institute will have a field to do much missionary work along this line.

On other pages of this issue appear detailed articles covering the organization, personnel and activities of The Cotton-Textile Institute so that they need not be further mentioned here, except to state that the enthusiasm and interest of the industry's leaders have never been unanimously aroused to so high a degree by one activity heretofore. Neither have the North and the South ever before shown the same high degree of cooperation and absence of sectionalism as they have displayed in all details of the Institute.

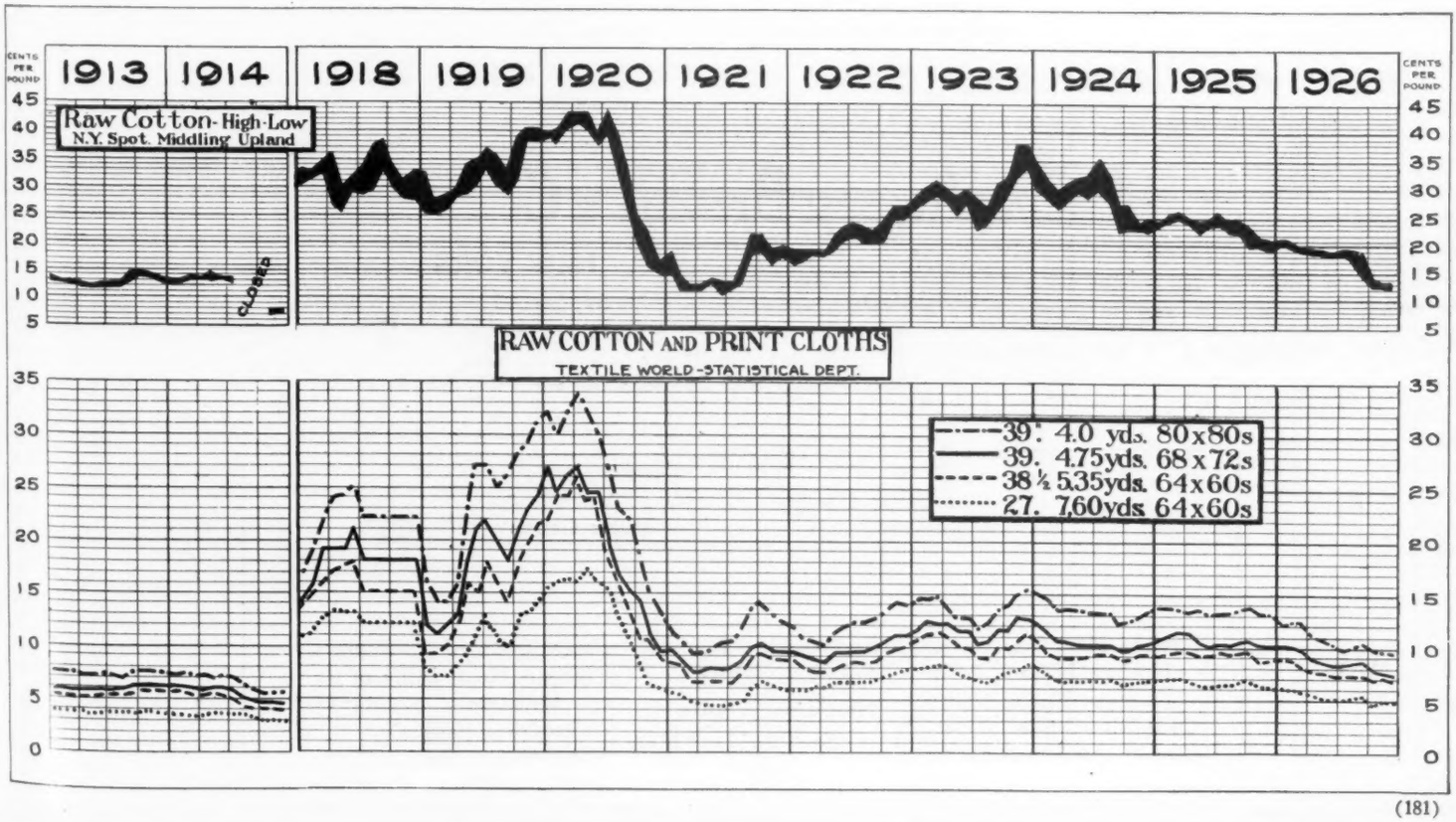
The Phenomenal Cotton Crop

Outside of the birth of the Institute, the outstanding circumstance of the year was the decline of raw cotton to a low basis which had been touched only once before since 1916, that being in 1921. The general progress of the market up to the middle of September was more or less in accordance with expected developments, but with the Government crop estimate named late in September it was evident that an exceptionally large cotton crop was in prospect and before the end of the ensuing month, it was realized that the largest crop ever grown in the United States was at hand.

From a high point of 21.25c on Jan. 18, cotton declined gradually to about 19c at the close of August. During the next five weeks the drop was rapid and by the second week in October the price had dropped below 13c. The low point for the year was 12.15c on Dec. 3. During the last three months of the year there was considerable investment buying of cotton and several manufacturers made it quite plain that they were covering their needs for one to two years ahead, on the ground that the cotton price was below cost of production and the risk of buying was scant because cotton was on the lowest basis for many years if due recognition was given to the change in the purchasing power of the dollar.

Expect New Life in Market

The low basis on the raw material is regarded not only as a help to mills toward achieving a better margin of profit but it foreshadows broader sales of goods by establishing a basis which users cannot long doubt or resist. Lower prices on goods permit distributors to stock more goods and greater varieties without tieing up more working capital. The greater variety and the lower price should again prove helpful in increasing sales. Prominent textile executives have expressed themselves vigorously on the new life which the low price basis is certain to bring to their market. It reduces for the moment the pressure which foreign grown cotton might have brought to bear upon the domestic staple, and it may develop an export



Amory, Browne & Co.

Cotton Fabrics For World Markets

The sudden increase in volume of American exports during the war caused some of our friends to regard all American manufacturers as newcomers in export business. They overlooked the fact that the exporting of American cotton goods was established nearly a century ago.

Its steady growth is due to better goods produced by American methods of quantity manufacture, using home grown cotton on the most modern machinery — also, the years devoted to study of export markets have taught the American manufacturer the need of exact knowledge of the peculiarities of each market as to packing, shipping customs, etc.

Our organization includes men who personally have travelled in many of the principal markets of the World and have first hand acquaintance and sympathy with the problems of the buyer in other countries.

Amory, Browne & Co. invite the world's consideration of the standard mill brands they handle, many of which have been established for years in foreign markets. A mill brand or trademark stands for uniform quality of product — guaranteed by the manufacturer.

Correspondence is invited concerning any kind of cotton fabric.

Amory, Browne & Co.

BOSTON **NEW YORK**
CHICAGO **ST. LOUIS**

Selling Agents for
New England and Southern Mills

Cotton Piece Goods **Part-Wool Blankets**
Hosiery **Dress Goods**

Nashua Mfg. Co.
Nashua Mills
Jackson Mills
Conestogo Mills
United Hosiery Mills Corp.

Boston Mfg. Co.
Lancaster Mills
Hamilton Woolen Co.
(Southbridge, Mass.)

New Bedford Spinning Co.
Indian Head Mills of Alabama
The Quinebaug Co.
The Wauregan Co.

No. 10 of a series

field for fabrics into the world's poverty stricken areas where textiles have been scarce for many years but where finances have been insufficient to permit much buying.

Problems of Distribution

Problems of distribution have been in the forefront during the year. These have dealt largely with whether or not it would be possible for the larger manufacturing organizations to maintain their contact exclusively with the jobber. Rapid style changes, the thirst for quick turn over, general caution, limitations set by bankers, and the uncertainty of the retailer, brought jobbers to a point where they were not supplying adequate forward business and their frequent operations upon very small quantities for prompt delivery, left manufacturers in a frame of mind to go direct to the retailer or any other buyer who would supply orders. It is believed the worst of these differences is past, and that commission house and wholesaler now understand each other better than at any time in recent years. The manufacturers who depend upon volume business, acknowledge the position of the jobber and admit that in his absence the wholesaling function would have to be performed by someone and that probably the existing wholesale organizations can perform it as cheaply as it could be done by taking that function into a commission house and selling direct to the retail trade. First hands have made it clear to the jobber however that to hold his place he must function efficiently and supply sufficient advance orders to permit proper manufacturing schedules. The jobber must stock up-to-date and desirable goods and in all probability better quality goods than he has been stressing to his trade during recent seasons and he must share some of the risk of doing business with the mill.

Curtailment Last Summer

The darkest hours of the year of 1926 came during the spring when it was evident to leading merchants that production was proceeding at a much faster rate than that at which goods were selling. Such a trend if continued, could only bring disaster. Most manufacturers had taken the attitude that it was well enough for somebody else to curtail, but that they individually would keep on running in the hope that they could sell their stock when business eventually improved. Last spring however when this problem came up with renewed keenness something was actually done about it, and mills were persuaded of the truth of the policy of matching their production to demand. By mid-summer curtailment of weaving operations in the South was reported to average 25%, and curtailment of spinning was probably in excess of 35%.

This policy reaped a prompt reward in that prices of gray goods, which had been sagging since the first of the year, touched their low point for the movement in the first week of July. They rose almost steadily from that time until the first week in September brought forebodings of the great size of the cotton crop, which later was to have so pronounced an effect upon the price of the raw material. It is not unlikely that the temptation to overproduce will confront the market again before long and it is hoped that the information supplied by The Cotton-Textile Institute plus the experience of last summer may be fruitful of benefit.

An Orderly Recession

One of the astonishing things of the year was the manner in which the goods market accepted the slump in raw cotton and maintained an orderly and gradual decline in the face of a break of 5½c in raw cotton over a four-week period. Before the raw material decline started nearly all mills had experienced better business, and had taken orders which engaged their machinery from two to four months ahead. The gradual decline protected these orders and also was helpful to the distributor in giving him a chance to move his stock before he had to compete with a new low level of prices.

It was notable that lines of finished goods were very slow to reflect a change. Large manufacturers of prints made the announcement in October that there would be no changes in their prices and this action not only stabilized their branch of the market, but brought courage to other divisions. Shortly afterward the gingham manufacturers announced that their prices would continue unchanged, with stock protection to the end of the season in most cases. When denims were finally priced for the first quarter of 1927 they were cut 2c to 13½c. A large business was done, some houses being sold up, and the price advanced to 14c. Reductions of 1 to 3c were made in December on flannels and a large business accomplished. Losses written off at the year-end inventory will doubtless curtail the profit which many mills might have shown for last year. Such action however gives them a well defined position for the coming year and enhances the probability of profit for 1927.

The Movement of Gray Goods

In the gray goods market there were three major movements during the year. The first was a gradual decline during the first six months, the second a moderate advance for about two months, and the third a decline during the last four months. It is interesting to note that the end of that last movement appeared to have come just before the close of the year, and it seems evident that the first general movement of 1927 will be an upward one. The course of 64 x 60s was typical of the market trend, and, particularly in the latter part of the year, this was the dominating print cloth construction. The high point was 8¾c, touched in the last two weeks in January. The first low point was 7c, made early in July. The next high point was 7⅞c in September, and the final low point was 6⅝c in the middle of December.

Effect of Style

Style trends have been important in affecting cotton dress goods. The year as a whole was not favorable to cotton goods and although many attractive cotton dress fabrics were shown they were bought only half heartedly. The various cotton manufacturers' associations realized the importance of style in this connection, and on several occasions during the year promoted style shows in which all the garments were of cotton. It is anticipated that the beneficial results of this style promotion work will be reaped in coming seasons. Already Paris is said to have looked with greater favor upon the cotton frock for use next summer, and that support seems sufficient to carry any style movement a long way. A more limited style development came to the fore last February when the bright colored cotton smock became the thing for women's wear in offices and factories. Standard sheetings were dyed for this purpose, and demand was sufficient to make suitable goods scarce.

Pajama checks were one of the few gray cloth constructions which sold actively during the early spring of last year. Even at that time orders running through to the end of the year were placed it is said as a result of the large nainsook underwear business which had been taken for summer and fall. Also at various times during the year operations by the bag trade on various coarse cottons and by the tire makers for tire fabrics and cords were features of note. As a whole duck manufacturers did not do particularly well, but where a specialty business had been developed mills were fairly well cared for.

The Agency Plan

The latter part of the year saw an interesting growth in the agency method of distributing branded goods through jobbers. By this arrangement the jobber becomes an agent for the manufacturer, the latter supplying him with his stock and setting the price at which it is to be sold. Until such sale the mill is in control of the goods and the jobber is relieved from the risks of carrying stock. He accepts a certain fixed percentage as his share of the transaction and the manufacturer maintains a demand for the brand through advertising campaigns.

Lancashire Expects Trade Revival

After Another Disappointing Year, Manufacturers See Sound Reasons for Improvement

From Our Manchester, Eng., Correspondent

AT the end of 1925 there were many signs of an early improvement in the Lancashire cotton industry, and the opinion was expressed that during the following 12 months there would be an increasing turnover in yarn and cloth, and that the position of spinners and manufacturers would be bettered. It was held in many quarters that values were on an attractive level for merchants to display enterprise, and for dealers abroad to replenish stocks.

The anticipated revival, however, was not experienced, and the failure of business to broaden may to a considerable extent be put down to two causes. In the first instance the steady fall in raw material values, especially during the last six months, has had a discouraging effect upon buyers, and all along the line there has been a disposition to act with extreme caution. Secondly the coal dispute had a vital effect upon the industry. Spinners and manufacturers were not only hampered by the limited supplies available, but in order to keep machinery running to complete old contracts, it was necessary to pay exorbitant rates for fuel. Owing to the depressed state of the market it was practically impossible for producers of goods to pass on this extra charge to their customers, with the result that the margin between cost and selling price was worse than ever.

In most sections of the trade the financial situation continued to cause much anxiety. Numerous failures were again reported, and when it was possible to do business, sellers in many instances had to consider the standing of customers. Many Manchester firms were adversely affected by losses in foreign outlets. The depreciation in the value of goods resulted in difficulties in getting dealers and merchants to accept deliveries against old contracts. Opportunities were taken to find fault with the standard of goods, and numerous attempts were made to cancel orders. It is always a trying time when yarn and cloth fall in price after being bought, and it is never satisfactory to the producer to be delivering dear goods.

Fortunately the industry was comparatively quiet so far as labor questions were concerned. Throughout the year no wages matter arose, and although minor disputes occurred at individual mills, on no occasion was there any fear of a general strike or lockout. As can easily be imagined the operatives in both spinning and weaving sections suffered owing to the large amount of short time that had to be worked in the mills and sheds.

The Cloth Market

The business done during the year in piece goods was much below expectations. According to the Board of Trade returns the shipments were less than in 1925. On very few occasions during the 12 months did buyers operate with any freedom, and for the most part they maintained their policy of purchasing from hand to mouth. This attitude is not unnatural in view of the fact that prices tended to fall from month to month, and as is well known it is never satisfactory from the point of view of the distribution of goods for supplies to be dear when the time arrives for dealers to hand them on to customers.

In the circumstances it was quite impossible to run weaving machinery

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Acadia Mills	Lawrence, Mass.	Tallapoosa Mills	Tallapoosa, Ga.
Katama Mills	Lawrence, Mass.	Central Mills	Sylacauga, Ala.
Manomet Mills	New Bedford, Mass.	Catherine Mills	Sylacauga, Ala.
Nonquitt Spinning Co	New Bedford, Mass.	Sycamore Mills	Sycamore, Ala.
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Electrical yarns
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Staple Southern Print Cloths

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Men's Wear
Dress Goods and Silk Trade

for

Hosiery
Underwear and Rubber Trades

Yarns manufactured according to Government specifications
Worsted and Worsted Merino twisted with
Cotton, Mercerized or Rayon
Slub dyed Worsted and Merino Yarns

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Pencil Stripes and Fancy Suitings
Mixtures
Vigoureux
Cheviots
Tropical Suitings
Gabardines
Coverts
Shepherd Checks
Whipcords
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Lustre Linings
Dress Goods

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Flannels
Fancy Borders
Kashmir; Crepe
Shepherd Checks
Bourette; Coverts
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Ottorep; Poplins
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Cord; Leno
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In various widths
and constructions
Combed and Carded.

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20 Market Street	AMSTERDAM	Amsterdam 595
Commercial Bank Building	CHARLOTTE, N. C.	Charlotte 4317

at anything like full stretch, and although part of the curtailment of production was due to the coal dispute, numerous firms experienced a distinct shortage of orders. Taking the year as a whole, probably output averaged about 70% of the full capacity of the machinery.

Another year of depression has resulted in serious financial losses, and the resources of most firms are now exceedingly limited.

There is more evidence than ever of severe competition from countries abroad, and many instances have been mentioned of the home mills in India securing contracts that in previous years have come to Lancashire. Then in the Near East, Italian manufacturers are now doing a bigger trade than ever before. Japan is becoming a more serious rival, the competition of that country being most pronounced in India.

Larger Indian Trade

It is possible to record an improvement in the amount of cloth exported to India compared with the previous year. In some respects, however, this increased turnover was not an unmixed blessing. On four or five occasions leading operators took a view of the market and bought fair quantities, but every buy went wrong owing to a decline in values after the goods were bought. Shippers, therefore, were in the usatisfactory position of sending out relatively dear cloth. As a result, dealers in the bazaars experienced much difficulty in arranging clearances on a favorable basis, and some cases were mentioned of serious losses, and the failure of native firms.

The most active demand ran on the lighter styles of cloth, such as dhooties, and some producers did fairly well, although business was very irregular. A fair amount of activity showed itself in mulls, jaconets and nainsooks. Makers of fancies of various kinds met with a steady demand, and the tendency for India to consume a larger quantity of higher quality goods was well maintained. This indicates that the purchasing power of India tends to improve. On the other hand, it was a deplorable year for makers of sized shirtings. Reliable statistics are not available and it would be interesting to know how many looms have been turned off this class of goods during the last 10 years. Some authorities are of the opinion that the reduction in output has been fully 50%.

It is scarcely possible to differentiate between the outlets of India, but shipments to Calcutta show a substantial increase on 1925. In the middle of the summer dealers in that market decided to stop forward purchases for periods from three to four months, and later the resolutions were renewed. The business that came round for Bombay was not at all encouraging, and that outlet appears to have been hit rather badly by financial difficulties. On the whole, especially during the last six months, some improvement showed itself in the demand for Madras, and there were indications of Karachi becoming a more important outlet for Lancashire goods.

The Home Trade

The home trade section was of course adversely disturbed by the unsettled industrial situation, and activity in this department could not be expected at a time of strikes and lockouts. The wholesale establishments and also retailers were adversely affected by the depreciation in the value of stocks, and most of the reports of public companies showed smaller profits. Considering the circumstances, however, the year was not generally unsatisfactory, and despite the general trade depression, the purchasing power of the public was fairly good. The unemployment insurance scheme of the Government, which is often described as the "dole," may be abused on many occasions, but it has the advantage of providing the working classes with purchasing power, even when unemployment is pronounced, so that shopkeepers secure the benefit.

Now and again Lancashire firms are charged with showing an absence of enterprise, but in fancy cotton fabrics suitable for home consumption there is a wide variety. Improvements are constantly being made by printers, dyers and finishers in their designs, and probably there never was a time when the public had the advantage of a larger range of styles.

The following table gives the exports of cotton cloth from Great Britain for the twelve months ended December, in the three years 1913, 1925 and 1926:

	Yards	£
1913	7,075,000	97,775,855
	Square Yards	
1925	4,433,745,000	150,526,000
1926	3,834,447,700	116,052,586

The following is a list of cloth quotations on particular dates during the last 12 months:

Date, 1926	32 in. printers 116 yds. 16 x 16, 32's & 50's s.	d.	36 in. shirtings 76 yds. 19 x 19, 32's & 40's s.	d.	38 in. shirtings 38 yds. 18 x 16, 10 lb. s.	d.	39 in shirtings. 37½ yds. 16 x 15, 8¼ lb. s.	d.
Jan. 8	27	9	32	3	15	6	14	6
Feb. 5	27	9	32	3	15	6	14	6
March 5	27	4½	31	7½	15	3	14	3
April 1	26	9	30	9	14	9	14	0
May 7	26	7½	30	9	15	0	14	3
June 4	26	3	30	3	14	7½	14	3
July 2	25	3	29	3	14	6	13	6
August 6	25	3	29	3	14	9	13	10½
Sept. 3	25	6	29	6	14	7½	14	1½
October 1	24	6	28	9	14	0	13	0
November 5	23	3	27	0	12	9	12	3
Dec. 3	22	9	26	0	12	9	12	3
Dec. 29	22	6	25	9	12	9	12	0

Spinners Depressed

In dealing with the spinning section of the trade it must be remembered that there are two branches—one devoted to the production of yarn from American and sundry cottons, the other being devoted to producing yarns from Egyptian cotton. The depression during the past year in the American section, was more pronounced than ever. Taking the 12 months as a whole, the situation can only be described as deplorable. Despite the fact that the mills curtailed production on a very large scale, there were very few occasions when spinners were able to sell their limited output without incurring a serious loss. In the circumstances many more cases were mentioned of spinning companies going into liquidation. The directors of numerous concerns were compelled to call up unpaid share capital, and thousands of shareholders were in a state of distress.

At the beginning of December the Masters' Federation, owing to the end of the coal strike and the withdrawal of the Government emergency regulations, recommended users of American cotton to increase the working hours in the mills from 24 to 35 per week. A fortnight later, the Federation made the important announcement that owing to the inadequate support given by the members to the short time recommendations it had been decided to withdraw all restrictions upon working hours, and henceforward, the members would be allowed to make their own arrangements as to production.

These important decisions indicate a change of policy on the part of the Masters' Federation. For a long number of years the view of the Federation has been that in times of trade depression the only remedy is organized curtailment of output. Latterly an alteration in outlook has been apparent and it may now be taken that a majority of the members of the committee believe that a way out of the present difficulties can only be reached by individual firms working out their own salvation without any control from any organization.

Throughout the year there was a good deal of irregularity in the position of Egyptian spinners. Up to the spring, trade was fairly healthy, but a little later spinners were adversely affected by the scarcity of coal and the fall in values as a result of the drop in the raw material. Throughout the summer the conditions were generally poor. In the autumn some improvement developed, and lately most firms have done rather better. The finer counts in this branch of the industry were more favorably situated than coarse numbers.

A falling off has to be recorded in our foreign trade in yarn, the shipments being less than in 1925. This development was chiefly due to the smaller demand from the Continent, the takings of Germany and Holland being very disappointing. Trade for India was patchy, and undoubtedly Lancashire spinners felt to an increasing extent the competition in that market from Japan. It may be mentioned, however, that exports to Bombay were slightly larger than in the previous year. Now and again some useful contracts were secured for the Near Eastern markets, especially in extra hard descriptions.

The following table gives our shipments of yarns for the twelve months ended December, in the years 1913, 1925 and 1926:

	Lb.	£
1913	210,099,000	15,006,291
1925	189,532,100	30,500,647
1926	168,543,200	21,783,800

The following is a list of cotton and yarn quotations for the last 12 months:

Date	Cotton middling American Liverpool d.	American yarns 32's twist d.	40's weft d.	50's weft d.	Cotton F. G. F. Sakellaridia Egyptian d.	Egyptian yarn 60's twist d.
Jan. 8	10.54	16¾	17¼	20½	17.95	31
Feb. 5	10.80	17½	17¾	21¼	18.50	31
Mar. 5	9.95	16¼	16⅜	20½	16.50	30
Apr. 1	10.16	16	16¼	20	15.85	29
May 7	10.12	15¾	16⅛	20	16.40	28
June 4	10.32	16	16½	20¼	17.20	28
July 2	9.26	15	15½	19¼	16.05	28
Aug. 6	9.74	15½	16¼	19⅝	15.80	27
Sept. 3	9.07	16¼	17	20¼	17.95	27½
Oct. 1	7.79	14¾	15	18¾	16.50	27
Nov. 5	6.88	13¼	13⅜	16¾	15.00	25½
Dec. 3	6.42	12½	12⅝	16¼	13.75	25
Dec. 29	6.85	12¼	12½	15½	13.95	24½

Cotton Mill Shares

Owing to the continuance of the depression throughout the industry, it will be easily understood that the cotton mill share market was in a very poor way. Much irregularity in quotations showed itself and most securities are at a lower level today than 12 months ago. The calling up of un-paid share capital was a serious matter and many firms had to go into liquidation. When these mills came to be sold in the open market the price per spindle realized was exceedingly low. According to an analysis of stocktaking results there was a steady fall in the average dividends paid.

Trade Betterment Schemes

It was a notable year for the discussion of various schemes which were suggested for the betterment of the industry. In the spring certain proposals were put forward by J. W. Platt, a well known mill director. His plan was that there should be formed a Cotton Trade Joint Board to be composed of employers and operatives, the scheme to apply to the American spinning section only. The first duty of such a board would be to divide this branch into five sections according to the counts spun. All spinning employers would be required to supply a weekly return of stocks, production, deliveries and orders. On the information obtained the board would then give instructions to the different mills as to what hours should be run. Those companies that wished to produce on a larger scale would pay a levy to the board, and out of this fund the operatives would be compensated for loss of working time. The scheme was very thoroughly discussed, but ultimately it was definitely turned down as impracticable.

In July a number of leading mill directors got together and decided to form the American Yarn Association Ltd., the object of this organization being to grade yarn and fix minimum prices. An important feature of this proposal was that there would be a penalty clause, and members who disobeyed the rulings of the Board would have to forfeit their shares. Fair progress was made by the association and at the time of writing their membership is equal to 15,000,000 spindles, but the directors have decided not to go to allotment until the owners of 20,000,000 spindles are in the association.

In the middle of the year the Masters Spinners' Federation again considered the establishment of minimum prices for American yarns. The proposals were approved by the trade.

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Fancy Flannels
Suitings
Solid Color Flannels
Shirting Flannels
Fancy Ginghams
Staple Ginghams
Pajama Checks
Print Cloths
Sheetings
Shirtings
Towels

Fancy Black and White Twills and Moleskins.

FOR

JOBBING, MANUFACTURING, CONVERTING AND EXPORT TRADES

and the scheme came into operation on August 16. Sellers of yarn acted in a determined manner, and the effect of the minimum prices was that more business was forced out. In October the minimum prices were revised, and the new quotations gave spinners an improvement in their margin of ¼d per lb. This system as a whole did good, but now and again there were signs of some spinners not being loyal to the official prices. Early in December there were more indications than ever of the scheme breaking down, and as a result of the situation being reviewed by the Masters' Federation it was decided to abandon the minimum prices. In some directions this course of action was much regretted but it was stated on behalf of the Federation that owing to many members not holding out for the official rates it was unfair not to allow spinners to withdraw the pledges given to adhere to the minimum rates.

In November, J. M. Keynes, the well known economist, in an article in the press, attacked the spinning employers for their policy of organized short time, which, he said, had helped to ruin the industry. The Masters' Federation invited Mr. Keynes to meet the committee, and a conference took place. On that occasion Mr. Keynes developed his argument and suggested as a remedy the formation of a cartel. This proposal is still receiving the consideration of the leaders of the industry, but numerous difficulties are in the way of anything being done, and it is doubtful whether any tangible result will mature.

Prospects

In considering the outlook for 1927 the most important factor in the situation is that raw cotton is cheaper than for many years back, and is back to the level of pre-war days. Owing to all costs being higher, yarn and cloth of course are dearer than in 1914. According to the latest index figures available, prices for piece goods are about 35% above pre-war. In this connection it may be mentioned that rates for all commodities are higher compared with the level existing in 1914. In the circumstances it is reasonable to anticipate a considerable increase throughout the world in the consumption of manufactured cotton goods.

Figures are available which show that during the last few years when cotton goods have been relatively dear there has been reduced consumption. If customers during the next 12 months will spend as much money on goods as during the past year they should be able to secure 600,000,000 yds. more than in 1926. If an increased turnover of this kind can be obtained then decidedly more looms should be soon running in Lancashire.

There have been so many disappointments on previous occasions during the last five years that it is necessary to display some caution in anticipating any big improvement in the trade situation during the next 12 months. The position, however, was never brighter for a definite trade revival. If Lancashire cannot do a bigger business at the lower prices now prevailing, it is hard to know when she will be able to do so. Despite increased competition from other countries Lancashire has still a distinct advantage by her much larger amount of machinery, and if the world decides to replenish stocks of cotton goods, then a big percentage of the business will certainly come to this country. In the circumstances, we may look forward to 1927 with hope and confidence.

A New Yardstick

(*Continued from page* 175)

pared with a little over 6% in this country. On all but the very finest counts, say above 120s, for which ring spindles are not commonly used, the production of ring spindles is much greater than that of mule spindles and to arrive at a comparable basis due allowance will have to be made for this difference. Lacking even approximate figures upon which to base an estimate we shall proceed with extreme conservatism and give two mule spindles the value of one ring spindle in productive capacity. We shall also consider it conservative to segregate ten million mule spindles as being operated upon counts finer than 120s, and shall regard these and ten million other spindles operated in the Egyptian section as having been run at 90% of capacity throughout the season of 1925-26, which is the period covered. "Short-time" reported by the International Federation for the British cotton industry during this period was 9.63 weeks; in addition we also deduct two weeks for holidays. We might also deduct 5% or more of the spindleage as being permanently inactive, but are refraining from this.

The British spindleage reported for the last half of the season of 1925-26 by the International Federation was 57,404,000, of which 43,755,000 were mule spindles and 13,649,000 ring spindles. Converting all to a ring basis, excepting the ten million spindles on the finest counts, the total spindleage is 38,750,000 and approximates very closely to "spindles in place" in the United States. Active spindle hours for the year of the 15 million spindles estimated as operating 90% of full time capacity were 32,250,000,000, and for the 23,750,000 spindles estimated as being operated on a 35 hour week basis were 38,570,000,000, or a total of 70,820,000,000 active spindle hours. This compares with a total of active spindle hours per active spindle operated in this country during the same period of 93,941,000,000.

If all of the British spindles are estimated as having been converted to a ring basis, excepting the ten million mule spindles segregated as being operated on counts finer than 120s, and with this total of 40,527,000 spindles estimated as being operated on the actual short time basis reported by the International Federation, without allowance for holidays, we get a total of 82,441,818,000 active spindle hours, which also is far below the active spindle hours per active spindle operated in this country during the same period.

If active spindle hours in Great Britain with an operating week of 48 hours are compared with those of Japan, for instance, with a total of only 5,416,000 spindles, but operated on the basis of a normal working week of 120 hours, and with those of other foreign countries whose working week is much longer than that legalized in Great Britain, much the same situation as to relative productive capacity will be disclosed as exists between the northern and southern states of this country. It is to be hoped that the International Federation of Master Cotton Spinners' and Manufacturers' Associations will be so impressed with the desirability of having comparable statistics of the activity of the industry in reporting countries that it will extend its reported data to cover active spindle hours and active spindles, and that it will avoid, if possible, statistical errors that have been allowed to creep into our government statistics and that diminish their accuracy to that degree.

Institute through Southern Eyes

(*Continued from page* 133)

school. My methods were all right in the days when profit margins were larger and competition less keen, but today, with all phases of manufacture and distribution undergoing revolutionary changes, the situation calls for men whose minds can quickly adjust themselves to new conditions. They need not necessarily be young in years but they must be young in vision—and they must be free from traditionary inhibitions."

Advertising

The fourth point was more definite in character. It had to do with advertising. Which, it is unnecessary to remark, is also not a new idea.

Nevertheless, the consensus of opinion developed by the writer was that soundly-conceived publicity was one of the most important functions of the Institute. The impression is that the American people are receptive today to advertising appeal as they never have been before—and that it is good psychology to capitalize on this state of mind. Despite all the "ifs" and "ands" about waste in advertising—and we listened to many of them—there is a real belief in the industry that a large expenditure is warranted — an expenditure which would insure appeal to communities, to banks, to distributors, as well as to consumers themselves. One manufacturer went so far as to say that he favored an assessment of as much as 10c per spindle per year for advertising purposes—providing the money were spent intelligently.

Technical Research

Next, we found an impression that the Institute cannot overlook technical problems; that fundamental manufacturing research must eventually be prosecuted and that it would be economic waste to develop a separate organization for this work. Proponents of this thought pointed out that textile men, like most other humans, go in cycles. This year they talk industrial relations, next year "efficiency," and the year after merchandising. Just now, they feel, the latter thought is in the ascendancy. With all due appreciation of the tremendous amount of work to be done in developing more economical methods of distribution, they feel nevertheless that further and more far-reaching changes in manufacture are possible and will bring about marked increase in profit margins.

It must be emphasized that these men are fully aware of the fact that the Institute was established for economic research and endeavor—but they believe that it is the logical organization to investigate technical problems fundamentally.

Developing Interest

Recognizing the bearing which community support has upon the progress of industries, and realizing further the need of instilling a broader vision into employes if interest in purely routine jobs is to be maintained, many manufacturers feel that another task for the Institute is the development of a program which will accomplish both these ends. Their ideas as to ways and means are indefinite but they visualize in this field a real opportunity for broad service.

Summary

Strangely enough, certain of the more tangible possibilities, such as the compilation of statistics, the extension of export outlets and the development of new uses for cotton goods, were not emphasized in most of the interviews. Probably it was because these have been broadly featured as determined parts of the program and required no particular repetition. It is also interesting to note that many of the suggestions outlined above call for publicity as the important tool.

Summing up, it is our opinion that the South is back of The Cotton-Textile Institute and that it is giving constructive thought to that organization's activities. Some of its suggestions are rather large orders but, fortunately, the Institute has at its head a man who is accustomed to man-size jobs.

ANDROSCOGGIN MILLS

James E. Coburn, *Agent,* Lewiston, Maine
Charles E. Inches, *Treasurer,* 77 Franklin St., Boston, Mass.

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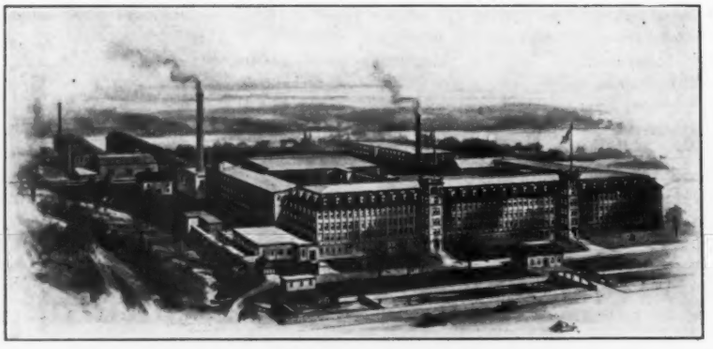

*ANDORA SHEETS AND PILLOW CASES

MERCERIZED COLORED SUITINGS

COUTILS

REPS AND GABARDINES

*AMERICAN A EXTRA HEAVY GRAIN BAGS

A wide variety of standard products
One unvarying standard of quality

BLISS, FABYAN & CO., *Selling Agents*

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From all parts of the country, 1926 orders for Wamsutta Percale sheets and pillow cases have been the largest in our history.

WAMSUTTA PERCALE SHEETS and PILLOW CASES Made by WAMSUTTA MILLS

This Trade-mark
—a green and gold label, is the mark sought by discriminating buyers of sheets and pillow cases

In advertising and merchandising circles and wherever else the condition of New England's textile industry is the subject of discussion, WAMSUTTA PERCALE sheets and pillow cases are invariably pointed out as a conspicuous example of a merchandising success.

Larger orders every year and a steadily increasing volume of sales, have proved beyond doubt the wisdom of a progressive advertising and sales policy such as the WAMSUTTA MILLS have carried out to promote the sale of WAMSUTTA PERCALE sheets and pillow cases.

The 1927 campaign of the WAMSUTTA MILLS will continue to point the way to New England leadership in every market that has a place for unquestioned quality.

WAMSUTTA MILLS

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Carded Yarns Affected by Government Estimates

Trend of Market Has Been Almost Universally Downward with Depreciation a Factor which has Prevented Liberal Purchasing—Problem of Decreasing Outlets for the Dealer of Increasing Importance—Direct Selling Tendency a Matter of Earnest Consideration

LITTLE incentive for liberal buying or anticipation of needs has been apparent in the cotton yarn trade for the year 1926. It has been almost universally a declining market with all that this means in the way of uncertainty for the buyer and discouragement for the seller. The only exception to this rule which made its appearance during the year was the strengthening of prices in September following a report on cotton by the Government which indicated that early estimates were too high. This trend in prices was short-lived and was brought to an end by subsequent decidedly bearish reports which gave a diametrically opposite view of the size of the crop and which naturally produced a depressing effect upon yarn prices and upon buyers' operations. The year ended with prices at the lowest point of the 12 months.

Comparisons of Declines

More or less argument has been advanced during the last few months, especially by buyers, that yarn has not declined proportionately with cotton and this has been given as a reason why it was unwise to buy ahead or in liberal quantities. A comparison of prices on cotton and yarn would seem to invalidate this statement and to prove that there has been as radical a decline in yarn as has been witnessed in raw material. In fact, with the advance during the last month in raw cotton the aggregate reduction in yarn prices figures a more drastic spread between the high and low of yarns than of cotton. The highest price touched for spot middling cotton during the year was 21.25c, which occurred in January, while the low took place in December, when cotton reached the minimum of 12.15c. This is a spread of 9.10c and as above stated, the trend has been almost universally downward.

In comparison the price trend on yarns has matched pretty well the declines in raw material. Taking three staple numbers, a greater decline is seen than in raw cotton. A comparison follows:

	High	Low	Decline
Middling Cotton, spot	21.25c	12.15c	9.10c
20s-2 warps	37	27.50	9.50
30s-2 warps	44	33	11
22s cones	37.50	27	10.50

In other words, yarns have declined during the year from 9½ to 11c based on spinners' figures for the most part, while even further reductions have undoubtedly been witnessed in case of contracts with the consumer who has very infrequently paid the spinner's price. This would seem to be conclusive evidence that there has been a proportionate decline in yarn to that experienced in cotton. It must be further remembered that the low point in cotton was reached in December and since that time prices have advanced. On January 13, 1927, spot cotton was 13.40c or an increase from the low of 1.25c, and yet yarn has not registered a similar advance although prices have naturally shown a firmer tendency with a stronger raw material market.

Start on Good Basis

Therefore it would seem that the prospects for the coming year are much more propitious than at the beginning of 1926. It was realized many times during the last year that the possibilities of fluctuations were such as to make yarn trading precarious. Buyers were not slow to realize this and they cannot be blamed unduly for their conservative attitude. Before contracts were completed there was often such a depreciation in the merchandise which they bought that it was discouraging to continue to operate with similar prospects ahead. The year 1927 starts on as low a basis as can reasonably be expected and the history of the first month of the year would seem to verify the prophecy that the trend is more likely to be upward than downward. This is encouraging to buyer and seller alike and though the latter has not taken advantage of a situation that is decidedly in his favor to any great degree, yet as this number goes to press there is evidence of a wider call for yarn with prospects of greater activity with greater assurance of purchasing than in months past.

Reports Upsetting Influence

If the influence of the Government estimates were apparent in 1925 they certainly were much more so during the year just past. The violent fluctuations in the figures as promulgated upset calculations and confidence of the buyer to a degree that has never before been experienced. To review these reports is but a reflection of the yarn market in a large degree. The first half of the year of course was without this influence but fears of a large crop had their bearing upon operations and with the appearance of the first July report, indicating a crop of 15½ million bales, the steady influence of these pronouncements by the Government commenced in all seriousness. Before the month was over the second report reduced the estimate by some 300,000 bales. In August the first report was in exactly the opposite direction and the estimate again rose to over 15 million bales. The report however which caused the only real spurt of the year was that of Sept. 8, when an aggregate of 15,166,000 bales was given out as the size of the crop. The influence was short-lived because the second report of September changed the situation entirely. Placing the estimated crop at 15,800,000 bales the effect upon yarn could not be but drastic in a downward direction. From that time on estimates rose and the prospect of over 18,500,000 bales naturally drove cotton and yarn down to their lowest point.

Position of the Spinner

Naturally the spinner has had his very difficult problems to confront and solve. His information about cotton has not been such as to warrant extensive outlays in raw material and perhaps it has been fortunate that this has been the case. If he had bought cotton liberally during the year he would not have been able to quote many of the prices that have appeared. He has had the advantage of constantly declining raw material costs. Nevertheless his profits have been small because, as evidenced above, the influence of declining raw material has brought about a condition as to prices that has more than offset the cheapened rate at which he has owned his raw material.

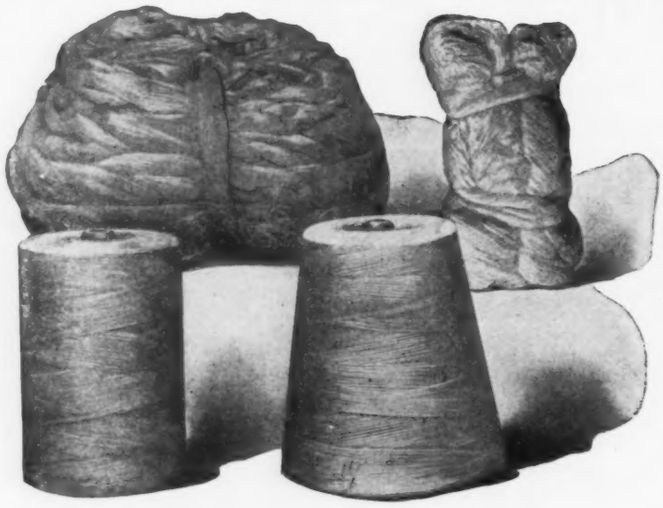
The spinner has fought against prices which figure an actual loss and it is questionble whether much of the year has shown a level that has netted any material difference between the cost price of his yarn and the selling price. But on the other hand, in very few months has it been possible to obtain what could be figured on as a fair profit and by this it is not meant to intimate that wartime profits are considered but merely a reasonable margin over and above cost of production. There has not been a similar reduction in operating schedules as was the case last year when the drought necessitated radical shutdowns. And yet with all the mills in the South running to fair capacity there has been no indication at any time that an undue stock of yarns had accumulated. As a matter of fact this has been one of the features of the year. Spinners have been able to secure business of a sufficient amount to keep their machinery running and to prevent a surplus accumulating. Nor has there been an accumulation in the selling market for the yarn dealer has not been as active during the year in buying yarns for his own account. There has been no incentive to do this because of the unlikelihood of merchandising yarns at a profit. Every time yarn was bought in anticipation of an advance the price went down and therefore the yarn houses have seen the futility of operating, during 1926 at least, with any idea that they could hold yarn which they purchased for an advance.

Evidences of Short Selling

On the other hand, there have been just enough upward swings to the price situation to make short selling a dangerous proposition. Not but that a good many dealers operated on the short end of the market at times. In reality operations of this character have been the cause in many instances of a better profit to the spinner than he would have otherwise secured. Instances have not been uncommon or isolated where the yarn dealer has been forced to cover with the spinner at prices which have meant an absolute loss to the dealer but to the spinner a better margin of profit than though these transactions had not occurred. The spinner has been cognizant of this character of buying and has not been slow to force a settlement of contracts to his advantage. While there have been wide spreads between the actual price paid by the consumer and the asking price of the spinner during the year, it is probably true that the quotations of the latter have been more nearly approximated than in certain other years, due largely to the fact that yarn has had to be secured from the spinner rather than from the stock of the dealer.

Problems of the Dealer

It is not stretching the truth to say that the dealer in cotton yarns during the year 1926 has been confronted with more perplexing problems than in a long period. As intimated above he has not been increasing his merchandising operations but on the other hand has restricted such activities to the minimum, with the exception of a comparatively few periods when it appeared as though he might make a profit by such activities. The dealer has also been faced with the restriction of his outlets. A greater tendency to buy direct has been noted in 1926 than ever before, nor is the end in sight. A large number of industries have changed their method of operations and have gone direct to the spinner for their supplies, thus cutting out the dealer and the possibility of his making a profit from the transaction. Concurrent with this tendency is the increasing desire of spinners to sell direct. The placing of accounts with exclusive selling agencies has increased in number and while not all of these changes have been successful they have indicated a decided shift in the attitude of the spinner toward his former method of marketing his product. Of course it will be a long time before any universal trend in this direction is realized. The impossibility of selling a small mill's product direct can be easily appreciated. When selling through the dealer the spinner receives his money within 10 days but when selling direct he has to wait for at least 30 days and perhaps longer. Whether such a condition with reference to the small spinner will mean



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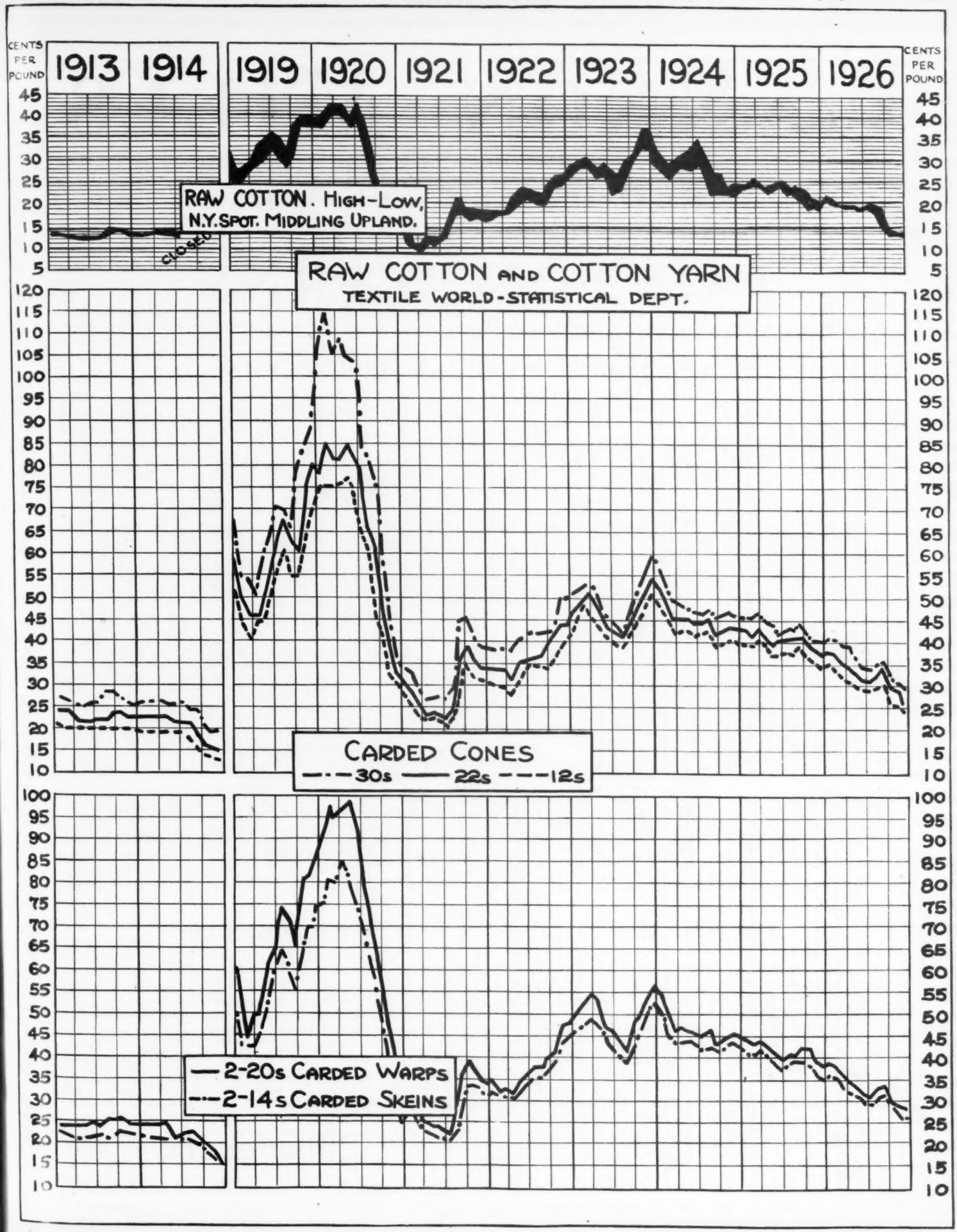
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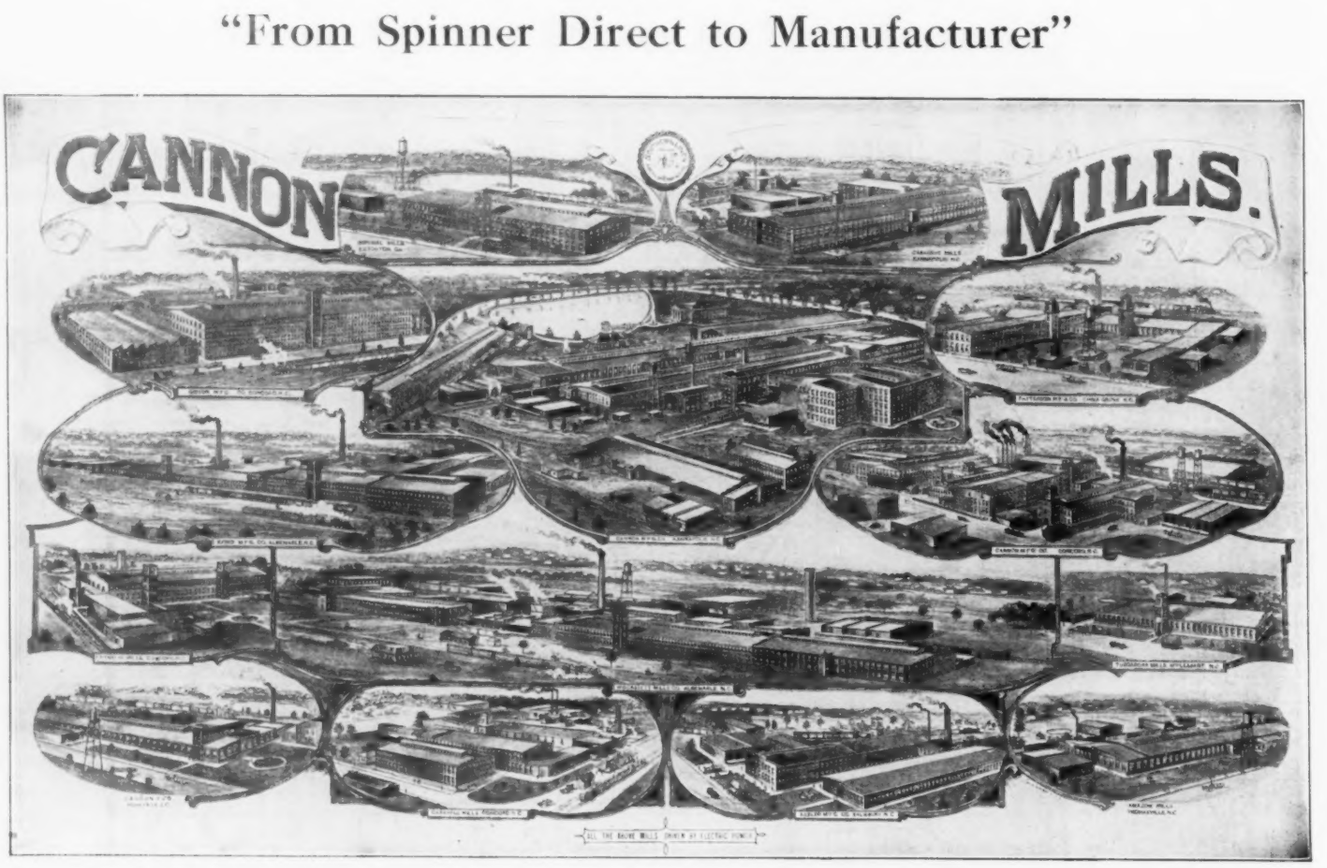

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the possibility of combinations in order to effect a more efficient marketing of product remains to be seen but it is realized that something will have to be done to correct this and other conditions. With the larger units there seems no insuperable difficulty about their going direct to the trade but it is realized that this means a restriction of product available to the dealer with consequent lessening of his business.

Split Commissions General

Another factor that enters into the situation as far as the dealer is concerned is the continued inability to secure full commissions. It would be interesting, if it were possible to obtain the percentage of contracts taken by the dealer at full 5% commission. Competition has become so keen in the sale of cotton yarn that in nearly every instance something under the spinners' price must be quoted and the only way to secure the business has been to eliminate part of the commission usually obtained by the dealer. Often it has been necessary to cut off the entire commission even where there has been no attempt to sell the market short. The consequence is that the profits of yarn houses have approximated the vanishing point and much dissatisfaction and discouragement are voiced with respect to the character of this division of the textile market.

A Better Prospect

It is appreciated that with a low basis to start the year and with every prospect of higher levels the dealer has an advantage on which he may be able to recoup some of the losses he has made in the last 12 months. It is possible that the business on the books of spinners today may reflect in part the change of heart by the yarn dealer. It has been the latter's contention for some time past that notwithstanding that declines in yarn prices had not indicated a point where it was feasible to operate for still further declines might be expected and the possibilities of profits were not to be seen. If the cotton market has made an absolute turn for the better, as many believe it has, then it is only reasonable to expect that the dealer should resume his operations for his own account. Nevertheless it is not anticipated that yarn houses will be the factors in the purchase of yarn during the coming months that they have been in the past. In fact the tendency is all in the opposite direction and the movement to eliminate merchandising and to cut down the element of speculation has, it is believed, only begun and will be enlarged to a material degree during 1927. It can be realized what such a change if carried out will mean in the personnel of the trade. It is certain already that houses which have figured largely in speculative operations in the past can no longer be counted upon for this method of operation and it is questionable whether others will arise to take their place. Also it is evident that an increasing number of houses will enlarge their representation of accounts for whom they will sell exclusively. In other words, it is believed that the complexion of yarn selling will be materially altered before the current year closes.

Spinners' Prices Held Firmly

A feature of the yarn trade which has characterized the last few months of 1926 has been the remarkable tenacity with which spinners have maintained their attitude regarding prices. Notwithstanding the declining market on raw material they have resisted attempts to secure their product at ruinous prices and have resisted successfully. Indeed toward the close of 1926 intimations were made that concerted action had been taken by leading spinners to maintain their prices. This statement has never been proven and there seems little question but that it was without foundation. The fact is that spinners have been able to keep their machinery running on orders, for the most part. With the first of the current year it was apparent that a good many were running out of orders and the requests for business were numerous but before the month of January closed the number who had not secured contracts into February and March, and in cases longer ahead, was comparatively negligible. And this has been the experience throughout the year. Predictions were frequently made that the spinner would occupy the position of suppliant for increased business and would make prices accordingly but before such a contingency arrived the statistical position improved and it was possible for the spinner to adopt a more independent attitude and withstand all attacks upon his quotations.

Export Trading Influence

The year as a whole has not been a favorable one to export business but the decline in prices within the last quarter of the year brought about the possibility of competition with other countries for the business of South America and other markets to an extent that involved a very satisfactory volume. Development in the export yarn division has also been toward direct selling through agents in the markets to which American yarn goes. Those who have made a specialty of this class of trading have realized the greater benefit which accrues through direct representation. The consequence is that agents have been appointed in a good many instances and the resulting business has demonstrated the wisdom of such action. It is possible to adjust disputes and to settle claims much more equitably with some representative on the spot to urge the proper methods of settlement. Losses have occurred in instances but the general condition of the export trade is much more favorable and the outlook much more encouraging than when prices were cents a pound higher than they are today. As long as the market remains at or near its present level it is expected there will be a continuance of demand from abroad and ability on the part of domestic distributors to meet the competition of foreign markets. Of course it is realized that an extension of these outlets should be a matter for serious consideration but there are disadvantages connected with the export trade, especially with those sellers who do not have direct contacts with the export buyers, that make it seem a difficult proposition and one which does not appeal to many.

Outlook Encouraging

In spite of all the difficulties and handicaps surrounding the yarn trade and in face of the probable changes which are likely to occur in the marketing of yarns, the mere fact that the market starts on an unusually low basis and that such a basis makes for increased certainty on the part of the buyer as to his operations augurs for an enlargement in the aggregate of yarn sold for 1927 and an increase in the profits possible to all engaged. Of course it is realized that overtime operations in the spinning mills of the South can very easily produce a condition which will offset such a favorable outlook, but it is predicted that the experience of the last few months has taught the spinner a lesson and that he will not run his machinery except where he has every prospect of orders to consume his product. If the spinning industry can learn the lesson of adjusting their product to demand, many of the uneconomic conditions which have been so apparent during the last two or three years will be eliminated and the market can progress in a satisfactory and orderly way, without the set-backs and loss of profit which have so often characterized it.

Lower Prices for Combed Yarns

Drastic Decline in Quotations During the Year—Mercerized Yarn Market More Stable

COMBED yarn spinners have had a less favorable year than during 1925, it being remembered that high prices and scarcity of combed yarns occasioned by the drought in the Carolinas during the summer of that year gave spinners a period of active and profitable trading. Last year, in addition, was a period of falling combed yarn prices and this together with full production all year resulted in circumstances less advantageous than in 1925 for a majority. As an illustration of the fall in prices, 80s-2 combed mercerizing twist was quoted at $1.12 in January while the same yarn was available at 80c December 1926, representing a decline of 32c or approximately 30% within the year. Under such conditions it was natural that manufacturers using combed yarns and mercerizers, the largest consumers, became more conservative as the year progressed in their yarn commitments.

Competition among combed spinners has been keener during 1926 than at any time since the war and, in addition to this, many counts have reached a lower level than has been found previously for from three to five years. Lack of large contracts from mercerizers has been the most serious obstacle combed spinners have been compelled to face, especially during the latter half of the year and the absence of forward orders on the books at any one time has been an important factor in bringing prices of these yarns, single and ply, down to a price level that is admittedly little above the actual cost of spinning.

The end of 1926 found these spinners not only in a less favorable position so far as their margin of profit was concerned but also in regard to the amount of forward business in hand. This development has been one of the most noticeable features of the year's business, the disposition of manufacturers and mercerizers, at many times, to buy in smaller quantities but to place orders more frequently than in the past. This became more apparent at the end of the year when large orders were entirely displaced by small amounts taken at shorter intervals. In other words, this new method of buying which did not materially affect combed spinners during a major portion of 1925, has reached important proportions and has been the cause of misleading statements as to the total volume of business booked during the latter months of 1926.

Change in Buying

As an example of this, one of the largest groups of combed spinning mills in the country reported a poor week to week business during the latter months of the year but at the end of this period, after they had added the totals for the various months, it represented a fair amount of business and large enough to take the production of their mills during the time in question.

While hand-to-mouth buying of combed yarns is less desirable from the spinners' standpoint and will no doubt increase their costs to a slight degree, it was the correct method for manufacturers to have pursued in a falling market such as we have been experiencing and also in view of the manner in which their own customers are placing goods orders.

Whether this will prove to be a permanent feature in combed yarns remains for the future, but it has been one of the most noticeable features in the merchandising of these yarns during the last year. Spinners, in many instances, were slow to adjust themselves to this situation and at times when they found their orders in hand about complete they became anxious and forced yarns on the trade with the natural result, a lowering of the already low level for these yarns. Yet it was only by this method that they could secure future orders which they felt necessary.

Weaving Demand Fair

Combed yarns for mercerizing were in fair to good demand during the first six months of the year, while interest from this section of the market declined, so far as large contracts

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were concerned, during the latter half of the year. That this was true is illustrated in the exceptionally large margin between the price of mercerizing twist and the price for same yarn in a harder or warp twist, as used by the weaving trade, this difference being as much as five cents in the finer numbers at various times. It was especially noticeable that, when demand from mercerizers declined, interest in combed yarns from the various weaving concerns continued fair to good. This, however, was not sufficient to keep combed prices from falling as it will be recalled that approximately 75% of two-ply combed sales yarns is taken by the mereerizing trade, according to trade estimates.

Without a doubt mercerizers exert an important part in influencing the trend of combed yarn prices. When mercerizers experience a run of good business and are in the market for gray yarns it is usually noted prices are steadied, while the reverse is true when mercerizers are running less than full time and have sufficient yarn in stock. The latter condition was in evidence at the beginning of the present year.

Mercerized Spotty

At that time and continuing into January mercerizers were not receiving a normal volume of new business as was seen from the fact that at least one large mercerizer found it necessary to sell combed yarns to the trade instead of processing them, in their endeavor to at least keep their spinning machinery engaged, though they were unable to do so in their mercerizing departments. In other words demand for mercerized had declined to such an extent that they were forced to compete against themselves. This is what such a condition really amounted to, as the bulk of yarns they offered was for mercerizing purposes. This condition was the result of a number of factors, all of which were regarded as temporary by the trade.

One of the most important occurrences in this section of the market during the year was the formation of the Mercerizers' Association of America which has stabilized the market price of mercerized yarns to an important degree since the organization began to function and this had also had an effect on the price trend of combed yarns. Prices of mercerized yarns have continued to follow the general trend of combed yarns but there have been less frequent price changes since the Mercerizers' Association was formed than before that time.

Buying Policy Changed

Prices of mercerized yarns have become steadier and week to week price changes have been fewer. Hosiery manufacturers seeing this may ask themselves what advantage there is to continue to place contracts covering their needs far in advance when they no doubt will be able to buy later at approximately the same price. Stabilization of prices many feel does not have any tendency to increase future contracting but rather the reverse, tending to cause manufacturers to cover immediate needs to a greater extent.

This trend has been evident in mercerized yarns during 1926 to a larger degree than at any time previous. Mercerizers must keep stocks of yarns ready for immediate shipment at various points where hosiery centers are located, or they will not be able to secure their share of the business. Hosiery manufacturers in particular are ordering small amounts of finished and dyed yarns at a time in the same manner as their own customers, and mercerizers who are in best position to take care of such orders have been benefiting more than their competitors who are still soliciting large contracts as in the past, permitting this retail business to go to their competitors.

Mercerizers do not believe this method of buying has been permanently adopted though they are ready to admit prices of their yarns have become more stable than heretofore. They assert mercerized will, as in the past, be largely guided so far as price fluctuations are concerned by advances and declines in the combed yarn field. What they believe will be remedied will be conditions such as were evident during periods of the previous year when prices of mercerized yarns reached an exceptionally low level in comparison with quotations of combed yarns, there being for example less than ten cents margin for mercerizers at one time in finer numbers such as 60s-2. Such a condition as this, mercerizers believe is undesirable from their own standpoint and no less from the standpoint of their customers.

Trend of Quotations

The degree of stabilization attained during the last year may be illustrated by the following review: in January, 1926, 20s-2 combed sold for 54c, 40s-2 at 69c to 70c, 60s-2 at 85c and 80s-2 at $1.12. At that time mercerized yarns were quoted on a basis of 83c for 40s-2, a mercerizing margin of 13c, 60s-2 mercerized sold at $1.00, a margin of 15c, and 80s-2 sold at $1.32, a 20c mercerizing margin.

At that time of the year the situation had changed materially, prices of both combed and mercerized having declined to an important extent. In June 20s-2 combed was quoted at 45c, 40s-2 combed at 55c, 60s-2 at 67c, and 80s-2 at 90c. Mercerized at that time was held at 67c for 40s-2 a margin of 12c, 60s-2 sold at 81c, leaving mercerizers a margin of 14c on this count, and 80s-2 was sold at $1.14, a margin of 24c for mercerizers.

Drastic Price Decline

By October of 1926 the decline in combed and mercerized had progressed further and prices then were upon the following level: 39c for 20s-2, a decline of 15c since the first of the year in the gray yarn, 40s-2 was quoted at 49c, a decline of 20c since January, 60s-2 was held at 62c, a drop of 23c since the first of the year, while 80s-2 dropped from $1.12 in January to 84c in October. Mercerized yarns were quoted at 67c for 40s-2 in October a margin for mercerizers of 18c; 60s-2 was quoted at 84c a margin of 22c, and 80s-2 was held at $1.13 a decline of 29c in this number since January.

The condition of the combed and mercerized market so far as mercerizing margins were concerned changed little from this time until the end of the year. In December, for example, 20s-2 combed was quoted at 37c, a decline of 17c for the year; 40s-2 was held at 45c, a decline of 24c for the year; 60s-2 was quoted at 58c, a drop of 27c, while 80s-2 declined 32c, from $1.12 to 80c within this period, a drastic change.

Mercerized qualities were quoted at 56c for 30s-2, 62c for 40s-2, 78c for 60s-2 and $1.03 for 80s-2, representing declines of from five to ten cents, as compared with prices of the same counts in October, but 17c to almost 30c as a decline for the entire year, varying according to count, 80s-2 mercerized having declined from $1.32 the figure at which this count sold in January to $1.03 in December, a drop of 29c for the year.

At this time margins between combed and mercerized yarns were as follows: 40s-2 mercerized was quoted at 62c or 17c above quotations on this count in the gray; 60s-2 mercerized was held at 78c or 20c above the cost of yarn in the gray; 80s-2 mercerized was quoted at $1.03 or 23c above the cost of the combed yarn. These prices illustrate the more stable condition in mercerized yarns, which has been in evidence since the formaton of the Mercerizers' Association, although it may be seen the major trends of combed yarns continue to indicate the path prices of mercerized will take.

Single Combed Improves

The year 1926 improved over the previous year in regard to pounds sold so far as single combed yarns were concerned. Large quantities of single combed yarns were taken by important underwear manufacturers, a majority of whom had previously used a high grade or double carded yarn for their garments. Many of them used combed yarns entirely this season because they were able to purchase single combed yarns late in 1926 for approximately the same price they had been paying heretofore for their double carded qualities.

Larger Production

Another factor to be taken into consideration when reviewing last year in regard to mercerized yarns is the fact that production of the latter was increased considerably in 1926, both from the standpoint of enlarging old concerns and also due to the entrance into this field of several new companies of large size. What effect these factors had in fixing the price level of the year is not known but it has been reported recently that competition among mercerizers during the later half of 1926 for example was unusually keen.

What is the most logical trend to expect in combed and mercerized during the present year? Based on prices during the last five years, combed yarns are selling at an extremely low level. To offset this is the report regarding the 1926 cotton crop to the effect that the supply of premium lengths is in keeping with the size of the total crop. A part of the effect of this may be lost because of damaged cotton. It is reported the crop in premium staples is limited considering the size of the total this season, so that an erroneous idea of long staple prices may be assumed when the total crop figures are considered.

Buyers of long staples are finding supplies of strict low middling and above relatively small and grades above this which many in the trade predict will become more apparent as the present cotton season advances.

Buyers of long staples are finding 1⅛″ and up to 1 3/16″ staples in supply more in proportion to the size of the present crop than grades above this. From this condition it may be assumed firmness in combed yarns may develop considering current low prices during the present year, which could then give the entire list a stronger tendency than the trade felt possible when the figures on the total crop were first examined.

Wastes Reach Low Levels in 1926

Decline Further Than Cotton—Comber and Threads Strong Features—Two Years' Decline Disorganizes Market

THE cotton waste situation in 1926 was dominated by excessively high prices paid to the mills by packers; by an abundance of low grade, cheap, competitive cotton; below normal consuming demand for everything except threads for wiping wastes; a steady decline in cotton values throughout the year and by diminished exports. The year as a whole was the most disturbing and distressing ever experienced by the organized cotton waste trade.

Near the close of the year it became evident that choice comber whether domestic or Egyptian was in very limited accumulation, that output for the year had been much below normal and that owing to decreased demand for fine combed yarns the output of comber in 1927 was likely to fall well below consumptive demand. Early in January, 1927, the best peeler comber sold at 12c or 90% of spot cotton. Picker, fly, sweeps, average card strips and wastes were low in price and uncertain as to future; but the generally low basis for everything and the caution shown in the placing of 1927 contracts suggested that it was quite within the range of probability that during 1927 the trade would experience more profitable business than seen either in 1925 or 1926.

The general price situation is shown

in the following table in which it may be seen that the decline in cotton and comber was about the same but that other wastes fell off in value to a much larger degree.

	January 1925	January 1926	Decline
Spot Cotton	20½c	13½c	34%
Peeler Comber	17 –17½c	10½–11½c	36%
Peeler Strips	16 –16½c	9 –10c	41%
Egyptian Comber	16 –16½c	9 – 9½c	43%
Sak. Strips	22 –23c	13 –14c	40%
Choice Fly	9½–10c	3½– 4½c	59%
Choice Picker	7 – 7½c	3 – 3½c	55%
White Cop	15½–16c	8½– 9c	44%

Exports of cotton waste in 1926 for the period January-November showed a decline of 14,555,000 pounds while imports, consisting of low grade materials from the Continent and of white and colored threads from Europe and the Orient for machining purposes declined 6,174,000 pounds. The situation for the 11 months is shown herewith:

	1925	1926	Decline
Exports, lbs	72,160,000	57,605,000	14,555,000
Imports, lbs	32,995,000	26,821,000	6,174,000

The situation in cotton wastes is beginning to show slow improvement. The turning point has been made and yet this is difficult of recognition at the moment. It is about as difficult to recognize the actual turning point in the market as it is to note the actual turning point in the tide. Surface appearances are usually misleading. Cotton is gradually creeping upward and it seems to be fairly well established around 13½c. The British industry which is a large consumer of cotton and also of comber and other high-grade materials is considerably encouraged over the prospect of a good supply of low-priced material and English buyers in the South have been picking up large quantities of hard, good spinning cotton and comber. Manufacturing in New England seems to be adjusting itself also to the changed conditions of things and the movement South has probably reached its maximum. The main points to be noted in the waste situation are the important considerations that wastes have been contracted for on reasonable bases and that the entire situation covering cotton and its wastes has been so thoroughly deflated that a stable market with a tendency to higher values is likely to be seen for the greater part of the year.

Larger Waste Demand Likely

A large consumption of cotton waste is the forecast made by responsible individuals for the year 1927. Price will be a very important factor and as contracts have been made on conservative bases the trade is not likely to suffer the terrific handicap encountered during the greater part of 1926 brought about by unnecessary competition which played into the hands of mills and left waste merchandisers in the hole. Good comber and strips are very saleable commodities and at fairly high prices. This puts good spinnable materials in a better position. Good picker and fly are still on the bargain counter, spot prices for the same being determined by consideration of an immense output suffering strong competition from linters. The market has been thoroughly deflated. All the weak spots have been ironed out and the consumer still expecting with little or no reason lower values on these commodities is likely to overstay his market. There is nothing in the situation to suggest anything but stronger values for most materials.

Near the close of 1926 there was considerable reluctance shown to closing contracts for the following year. Stocks of old materials were being reduced as rapidly as possible at what seemed very low prices under the fear that still lower values might be registered in 1927. There had unquestionably been a tremendous sacrifice of intrinsic values to extrinsic prices, the former representing real textile worth and the latter prices dictated by disturbed market conditions. All materials during the greater part of 1926 sold below their real values. In the last few weeks comber and choice strips began to do better and these materials maintained their improvement right to the end. Sak. strips had been strong throughout the year and are likely to stand out as the star performer during 1927. Threads for wiping waste purposes also seem sure of a relatively stable and good market. Other materials are still in the hole under the immense downward pressure of cheap cotton and linters and huge quantities of picker, fly and sweeps, production of which cannot be curtailed if the cotton mills north and south continue to run anywhere near current high rate of activity.

Manchester Waste Situation

The situation in cotton wastes last year was paralleled very closely by similar occurrences in the English cotton waste situation, centered in the Manchester district. An English authority discussing the situation said that it had been an exceedigly difficult year for anybody employed in the cotton waste trade. Most merchants had not the slightest hesitation in describing it as the worst on record. Throughout the year values had shown a great deal of instability and there had been an absolute lack of confidence on the part of buyers. Yearly and half-yearly contracts had turned out badly, inasmuch as prices had been dropping all the time. There was not a great deal of depreciation during the first half of the year, but there was a constant fear of it and this kept demand on a hand-to-mouth scale. If there had been any salvation it was that the large amount of short time worked both in the spinning and weaving districts has kept supplies of hard and soft waste at a low level. In many cases this had the effect of sustaining prices on a basis that was not unprofitable. The larger percentage of low grades in the record American crop has been detrimental to waste values.

High Contracts Work Havoc

Cotton wastes in the early spring were moving very slowly into consuming centers and prices were too unsettled to constitute a desirable and satisfactory market. Early contracts were bringing in materials at too high a cost to allow any profit to the handlers and some of the early contractors were quite willing to sell such materials at cost. European and British demand was negligible. In some quarters it had been said that the prices of wastes were "unnaturally high" compared with cotton and that the steady increase in prices of wastes during the last few years due to supply and demand as well as to "cut-throat" competition on the part of dealers trying to outdo each other in obtaining mill contracts had placed the price of waste too near the price of its parent commodity raw cotton, but that if the situation continued much longer prices of wastes would get down to a level where they belonged. Cotton wastes, to sum up the contention, were not on a "true economic" level. Moderate adherence could be given to this view of the situation and yet in a broader way the facts in the case hardly supported the contention.

Traders felt positively confident that 1926 could not be any worse than 1925 and was more than likely to be better. In this they were very much mistaken. Off cottons still constituted a factor of considerable and far-reaching importance particularly on the prices of medium spinnable materials. Choice spinnable materials although selling at that time below real value were expected to come up to the surface like a cork. Staple cottons were very firm and high-priced and the by-products of these materials would of course in the long run command a price based upon their intrinsic value.

Attempts to force sales were without success. Wastes were low enough and yet if a purchaser was not in need of anything even lower prices would hardly tempt him to take out of the market any sizable quantity. Production of wastes was on the increase. About this there seemed little doubt and as against this consumption of wastes was moving the other way. The contracting season was closed. Starting with high percentage bases in the early part of the season the progress of contracting had been on a declining scale so that the latest made were supposed to be on the whole a safer proposition than the early ones. But whether satisfactory or otherwise the situation was very similar when it came to selling wastes. Buying seemed to have dried up. The river with its downward movement to the consuming industry had become an insignificant stream.

Critical Market Situation

The market as a whole was in an almost critical position. Never before was the buying and selling of cotton wastes so hazardous a proposition. There was no fixed price to anything and quotations were strictly nominal. A considerable volume of good wastes, comber, strips, oily cards, soiled cards and similar materials had hitherto been consumed by the woolen industry which for the past two or three years had had the lead in wool manufacturing in the United States. Worsteds had registered a very strong comeback and the production of woolen fabrics was falling away rapidly. This change in the manufacturing trend curtailed very seriously one large and important outlet for cotton wastes. Waste prices at this time were not merely low because cotton was low but were as a whole below what might be termed a normal price relation between the staple and its by-products and wastes. This unhappy situation had been brought about to a large extent by the hand-to-mouth policy of purchasing, observable indeed in all markets, having been pushed to unreasonable and possibly hazardous limits. To sell stock in bulk was more than difficult and could only be accomplished by a marking down of values. Week by week wastes were on the balance accumulating and this, apart from any other factors, such as predictions of another large crop of cotton, was a sufficient explanation of prevailing unsatisfactory market. The policy of hand-to-mouth buying which was an established procedure in most industries and markets had caught the cotton waste market unawares with a number of long-time contracts running six months or even twelve months and this operated almost disastrously upon those contractors, and they in the majority, were unable to move their wastes except in small quantities. The contractor at this time was faced by a continuous inflow of materials for which he could not find any suitably large outlet.

In some sections of the market it was believed that the system of percentages contracting for cotton wastes would have to be abandoned and the English method of buying on contract at flat prices substituted. Not all traders could see it from this angle and it was said that the prevailing demoralized situation in wastes was not due to the method of contracting in itself but was to be ascribed almost entirely to the competition of cheap low-grade cotton. Mills evidently had the best end of the bargain this season providing that contractors could follow through their obligations and take in the wastes. Too many mills had come to consider cotton waste a 100% proposition and had not been quite inclined to place the business on a fair give-and-take basis. All were agreed however that something ought to be done to stabilize the industry.

Waste Deflation Over-Due

The deflatory process which had been going on in cotton wastes in a very marked fashion since the first of the year was probably long overdue according to some dealers in the market and even though values had been tremendously depressed, far exceeding any normal recession in prices incident to a continuously declining market, it was by no means certain that the end had been reached. During the last two or three years there has been altogether too much of a tendency to regard cotton wastes as staple commodities and mill treasurers educated by competitive dealers and contractors in this view of the situation had come to regard mill wastes as standard good-priced products of

the mill instead of wastes to be sold at waste prices and marketed as such. It would therefore seem that if the cotton waste business is to regain its old-time progress and the merchandising of such materials is to be placed upon a sound basis in which fair profits can be secured upon capital investment and risks assumed the general price level will have to become firmly established upon a lower relative level of values than had prevailed in general since 1922.

The reduction in the output of wastes in August was a favorable feature. The trade already had too much waste on its hands, and high-priced at that. As between the various descriptions it was the same old story, strength in comber and threads and weakness everywhere else. There seemed little reason to expect that the waste market would be able to move ahead of the cotton market and there was about the same reason to expect that cotton wastes as a whole would again arrive at a selling level comparable with that on which they had been marketed on the average since the war. Sellers of wastes suitable for woolen mill consumption were receiving very little encouragement from that source.

Comber Resists Decline

The real feature of the cotton waste market during October was the surprising strength shown by good peeler comber. Its average selling price was practically unaffected by the continual decline in spot during the month which culminated in December cotton touching 12c on appearance of official estimates forecasting the largest crop on record. When cotton touched 12c it met the price at which choice comber was held by the few houses possessed of limited stocks of this high grade material. Comber at 90% was not a lasting proposition. There was plenty of good cotton available at lower prices than comber, and quite suitable for displacing this material in manufacturing operations. The high price at which it was selling was brought about by stocks being somewhat inadequate to allow of short covering operations without advancing prices.

The year 1926 was unquestionably the worst year experienced by the trade since 1920 if not in the entire period covered by the organization of the American Cotton Waste Exchange. Cotton wastes had quite a shade-down at the close of September and during the first few days of October, all in very marked contrast to the hopeful spirit and better market seen among waste traders during the greater part of September. As cotton declined, percentage bases for comber moved up. Choice comber which was on a 73-75% basis during the first week of September rose to around 90% for the last week. It was a strong stock all through the month and in spite of further bad break in cotton at the beginning of October had been less affected than other materials and closed the year strong.

Low Grades Hamper Staple Growers

That Feature, Plus Price Decline, Renders Farming Unprofitable—Shippers Have Good Year

MEMPHIS, TENN.

SHIPPERS, in this market, have had fairly satisfactory experience with staple cottons during the last 12 months and the future, ahead of the new crop movement, does not appear to be fraught with unusual difficulties. Some were oversold at times and had to stand some punishment; there are still a few in that position, because of grade scarcity; the majority however are comfortable.

Growers have had another difficult year. They produced crops only slightly smaller than the largest ever produced, but farming operations were rendered unprofitable not only by a general decline in prices, and narrowed premiums but by the poor quality of the product; super-abundance of low grades was reflected in excessive discounts far out of line with intrinsic differences; selling of low grades was at times panicky.

Practically the entire supply of staples carried over in the South at the end of the 1925-26 season was of low grade, because of color. The supply was further augmented by the crop of 1926 which contained approximately as large a quantity of grades below strict low middling as did the crop of 1925 growth. However, this year it is not a matter of color that reduces the grade, but foreign content; nevertheless pickings since Dec. 1 show much color.

In any event there will be no dearth of low grades for a long time to come. A year ago, investment purchasers of low grades figured that another low grade crop could not reasonably be expected within three or four years, and that gradually diminishing supply would restore prices. This year's crop has upset their plans or at least postponed realization. At the same time most investment holders of low grades have not been badly hurt; purchases were made at prices involving little risk and demand sprung up which advanced prices from three to four cents a pound during the first six months of the calendar year. Neglect of the low grades after the current crop started to move, and belief that the total crop would be more than ample, caused a break in low grade values, but improved demand during the last 30 days has had the effect of enhancing values from one to two cents a pound from the season's low; buyers are not as yet making any price allowance for staple; inch strict good ordinary brings quite as much as 1 3/16 inch.

Some purchasers of low grades, early in the calendar year, made the mistake of attempting to hedge them in the near months and often with disastrous results. These holders of hedged low grades were partly responsible for the clamor, a few months ago, for a broader contract and for southern delivery.

Investment buying of new crop low grades has been engaged in to only a limited extent. In fact shippers have been very slow to cover commitments of such cottons, feeling that they were well fortified by the carry-over from the previous year and that the lateness of the new crop assured them of at least an average percentage of low grades. By the same token they were cautious in entering upon commitments for middling and above and quick to cover when the opportunity presented itself.

Better Grades Sell Freely

The better grades were sold freely by first hands early in the season; willingness to sell was probably stimulated by a declining market and constantly increasing crop estimates. There are few of these better grades, that are not earmarked, in the South today; some may be found in crop lots, held for a round price, and some are being held under pooling arrangements, although the quantity of high grade staples so held does not represent a very large total.

Nevertheless the supply of intermediate grades is very much better than it was last year; in fact, last year, owing to protracted rains during October and November, hardly anything was to be found in this section, between the grades of strict, good, ordinary, and middling.

The New Crop

The supply of new crop staples, of all grades, is fairly well proportioned to the size of the general crop. The Mississippi delta crop is nearly as large as the record crop of 1925 when about 1,000,000 bales, about 85% of which were staples, running commercial 1⅛ in. or better, were produced; and, this year's crop contains about the same percentage of staples. Compare this with the Mississippi crop of 1923 which was only 622,617 bales for the entire State; the State of Arkansas produced only 643,643 bales in 1923 and will produce close to 1,600,000 bales this year, of which fully 25% will be 1⅛ in. or better. Louisiana, Missouri and Tennessee should add at least 250,000 bales to the supply of staples, and South Carolina and scattered areas elsewhere say 200,000 bales.

At the same time the supply of full 13/16 in. will be limited, and the supply of 1¼ in. and better almost nil, for the reason that the seed to produce such lengths was not planted. Growers claim that premiums for these extra staples do not compensate them for added costs of production. One or two seed varieties have become such favorites, as to be used almost exclusively by staple growers throughout this section, which produces approximately 90% of the total American supply. These varieties are relatively free from mildew and bollrot, and mature early, which is an important consideration in a boll-weevil year; however, they possess the unfortunate characteristic of opening the bolls almost all at one time, and exposing the cotton to weather damage, to which the older and more slowly maturing varieties were less susceptible. This characteristic has recently been urged against the continued employment of these varieties and in explanation of the disappointing quality of the crop. Their value in boll weevil years is conceded, but many, who point out that high grade late crops were produced with the old varieties, question the wisdom of employing varieties which open so rapidly they cannot be picked promptly.

To Dec. 13, Mississippi, Arkansas and Tennessee had ginned 3,358,000 bales, leaving, with no allowance for the possibility that bales are heavier, 667,000 bales to be ginned to make the Government estimate. Last year the three States ginned 3,509,000 bales to Dec. 13 and 583,000 bales after that date.

While there has been a distinct scarcity of strict middling and above all season, the general impression seems to prevail that not more than 30% of the ginnings of the three States prior to Dec. 13 grades strict low middling or better; of course nothing as good as low middling is to be expected after that date. The almost universal use of Delfos seed in alluvial sections of Memphis territory has not only greatly limited the supply of 1 3/16 in. and above, but has also caused a scarcity of 1 1/16 in. In other words very little longer than full inch and less than commercial 1⅛ in. is to be found.

Growing Conditions

The 1926 crop got off to an unusually late start, owing to a late spring. There was little fruitage prior to Aug. 1 although the plant was unusually large. Some, probably the majority, attributed poor fruitage to cotton hopper depredations, while others took the view that weather conditions were responsible, which more probably was the fact. There were enough boll weevils scattered about the fields to suggest a threat, but they did no important damage. Fruiting during August and September, months in which, under weevil conditions, the crop would have been brought to a standstill, was profuse. The harvesting season, except in Oklahoma and parts of north Texas, was very good until about Dec. 1. Oklahoma experienced very little weather suitable for harvesting until about the middle of November; much of the growth of that State will be lost. Missouri farmers are making poor progress in harvesting, partly because of lack of price incentive.

Statistical Position

Mid-season stocks here are large, but it is unlikely now that the record of 376,000 bales, established Jan. 18, 1921, will be reached; the stock here is about 340,000 bales of which 50% is unsold; the warehouse capacity here is 450,000 bales. Stocks at compress points in surrounding territory are also

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heavy; some points have been embargoed, and there is still more cotton at some points than rated capacity but receipts have been falling off during the last 30 days; shipments now exceed receipts. For instance receipts at all Arkansas compress points during the last week of December totaled only 17,702 bales against 40,101 during the corresponding week in 1925, while shipments totaled 35,376 bales against 36,372 in 1925. Light receipts are accounted for, partly at least, by unfavorable weather conditions, which not only rendered field work impossible but interfered with transportation.

Indications are that the supply of high grade staples has already been practically absorbed by numerous merchants who covered their commitments on the grades as early as possible. Contrary to rumor, these high grade staples do not appear to have passed into one or a few hands; one or more spot houses mentioned prominently in this connection do not operate extensively in this territory.

Price Movements

Low grade prices are nearly as good as they were at this time last year. Last year some of the low grades sold at discounts of 12c a pound; this year the limit was about six cents under middling ⅞ in.—few have sold at so large a discount; from three to four cents has been the rule, although, as already stated, the buyer makes no allowance for staple. One of the features of the closing week of the year was the increased inquiry, especially for low grades; however, as little business developed, merchants were disposed to believe that the inquiry was for the purpose of establishing year-end inventory values.

Notwithstanding the supposed scarcity of middling and higher grade staples, premiums are narrower than they have been for several years at this season. This may be due in part to substitution of lower grades, obtainable at bargain prices. These low grades can be cleaned; last year the color was against them. Middling 1⅛" staples, which a year ago commanded 600 to 700 points on, and which two years ago commanded 450 points on, are now selling at 200 points on; 1 3/16" middling is bringing 400 points on against 850 to 950 points last year and 650 the year before; 1¼" middling, which is quoted nominally, because of scarcity, 900 points against 1,050 to 1,250 points last year and 900 points the year before.

So far the new crop is being given little thought except such as has been aroused by agitation to reduce acreage. Judging by the experience of the past a reduction of about 15% may result automatically from unsatisfactory prices. The acreage campaign is being conducted by solicitation of personal pledges which call for reductions ranging from 25 to 50% from last year's acreage. How thoroughly it will be possible to canvass the belt and how conscientiously pledges will be respected remains to be seen, and one man's guess is about as good as another's.

Taking the belt as a whole there has seldom been better soil moisture. The seed supply, although not equal to 1925, is much better than it was last year. Very little plowing has been done except in extreme southern sections. In northern sections much of the crop is still in the fields; this is especially true of northern Texas, Oklahoma and Missouri. With average weather from now on, harvesting will not be completed before March.

Bank loans to finance the new crop will be hard to arrange, but offsetting this, partially at least, is the fact that the cotton farmer has seldom produced better crops of foods and feedstuffs, so he will be in a measure independent and in position to produce the new crop at very low costs.

Complete Reversal in Raw Cotton Situation

In Three Years, Fear of Shortage Has Been Replaced by Surplus Condition—Resulting Price Movement Places Cotton Within Reach of All Peoples of World—Optimistic Views Prevail as to Distribution of This Year's Crop at Present Level of Prices

IT is doubtful whether a stronger contrast could be found than a comparison of the present trend of thought in the cotton trade with that of three years ago. At the beginning of 1924 after a series of small crops the world's anxiety in respect to cotton was with reference to the possibility of developing new fields of production and insuring adequate supplies. The adequate crop of 1924 followed by a moderate surplus in 1925 and the still larger preduction of 1926, however, has absolutely reversed the situation, and as we enter 1927, the talk is all of overproduction, ruinously low prices, and the necessity of curtailing acreage to insure the grower a fair return for his labor. In short, the swing of the pendulum in this comparatively short period of three years has carried the cotton trade from shortage and almost prohibitive prices, to a surplus and a price at which the least prosperous of the world's peoples should be able to clothe themselves decently, and at which an outlet should be found for the full output of the world's looms and spindles.

The increasing tendency of the crop since the famine year of 1921, has not only reflected the increase of acreage brought about by an era of high prices, but increased yields per acre. The latter may be attributable to accidents of the weather and more intelligent cultivation, but a casual glance over the records would suggest that in at least three directions, cotton trade conditions have been working back to normal, if that expression can be properly used as representing the pre-war average.

This applies, of course, to the trend of affairs with reference to exports of American cotton, yields per acre in the South, and the price. That our exports should gradually work back to pre-war or greater volume, with the progress of recuperation abroad, would seem a perfectly natural working out of economic conditions. That the yield of cotton per acre should gradually increase as compared with the small outturns noted during the war period and immediately afterward may be partially attributable to the use of a better balanced fertilizer as well as to the westward shifting area of production. The increase in the available supply, of course, accounts for the decline in value, and with ample supplies available at low prices, it is likely that the trade abroad will take something like a "pre-war" average in exports from the United States this season.

TABLE I

	Exports	Yield per acre	Average price
1911-12	10,681,758	207.7	10.16
1912-13	8,800,966	190.9	12.20
1913-14	8,914,839	182.0	13.49
1914-15	8,544,563	209.2	7.94
Average	9,235,532	197.5	10.95
1915-16	6,191,110	170.3	11.99
1916-17	5,739,009	156.6	18.41
1917-18	4,476,124	159.7	28.86
1918-19	5,663,920	159.6	30.36
Average	5,517,541	161.3	22.41
1919-20	6,598,347	161.5	38.21
1920-21	5,796,107	178.4	16.08
1921-22	6,316,121	124.5	17.78
1922-23	4,864,027	141.3	24.06
Average	5,893,651	151.4	24.04
1923-24	5,772,000	130.6	31.67
1924-25	8,195,876	157.4	24.27
1925-26	8,134,511	167.2	19.88
1926-27	*10,500,000	*187.0	*13.04
Average	8,155,622	160.6	22.22

* Estimates of exports are heard ranging from considerably below to above this figure which is used merely for purposes of illustrating the trend. Yield per acre is given as estimated by the Department of Agriculture. The price of middling is that recently ruling in the New Orleans market.

In any event, the fact remains that in these three directions, at least, the cotton situation is working back to a position of affairs very similar to that which prevailed before world conditions were thrown into demoralization by the outbreak of the Great War in 1914. For the purpose of illustrating the progress in this respect, we append Table I, which gives the exports from this country, average yields of cotton per acre in the South, and the average price of cotton in the New Orleans market for a series of years, arranged in a pre-war period, the war period, the period covering the first phases of the readjustment from war to peace time activities, and what we may term the ensuing years of grateful recuperation.

Boll Weevil Situation

One of the first questions which presents itself in a study of the above records is with reference to the boll weevil. It is doubtful, perhaps, whether diminishing damage from the boll weevil during the last four or five years, means that the South has effectively and finally conquered the insect. It is probable that better methods of cultivation have contributed to the crops growing immunity, but it is quite clear also that something has been due to weather conditions. A statistician of the Bureau of Agricultural Economics maintains the theory of a cyclical tendency in the matter of the boll weevil, and in a recent article states that an analysis of reports received from crop reporters of the United States Department of Agriculture, seems to indicate that boll weevil damage during the next three or four years will probably be considerably greater than in either 1925 or 1926 but it would appear unlikely that the extent of damage will be as great as in 1921.

The Department of Agriculture publishes figures showing the per cent of damage to the crop from various causes, and these estimates would indicate that damage from insects has been steadily diminishing since 1921. The figures in detail are given below. Those for 1926, of course, are not available but are not likely to exceed those of 1925, which it may be noted fell below the group of pre-war years:

Growth year	Climatic	Diseases	Insects	Unknown	Yield lint per acre
Pre-war period:					
1910	15.4	0.4	7.5	5.1	170.7
1911	20.7	0.4	7.9	2.4	207.7
1912	23.1	4.3	6.5	1.2	190.9
1913	13.8	0.5	8.9	1.2	182.0
1914	19.3	0.2	9.8	1.6	209.2
Average	18.5	1.1	8.1	2.3	192.1
Post-war period:					
1919	21.2	1.4	18.8	0.5	161.5
1920	13.1	1.1	24.0	0.8	178.4
1921	16.1	1.0	35.4	0.5	124.5
1922	17.5	0.8	26.7	0.2	141.3
1923	18.0	0.7	26.6	0.2	130.6
Average	17.2	1.0	26.3	0.4	147.3
Last three years:					
1924	21.3	0.8	12.0	0.6	157.4
1925	30.7	0.6	6.0	0.1	167.2
1926	.....	Not available		.....	est. 187.0

Temperatures so far this winter would seem to have been unfavorable for weevil in hibernation. It is reported that there was an increase in the infestation of weevil late last summer or early autumn, and it is possible that more of them went into hibernation in some parts of the belt than would be indicated by the outturn of the 1926 crop. The weather,

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however, since the first of December has been a succession of rains followed by cold waves, and at times temperatures have been low enough, it would seem, to kill off insects unless they were remarkably well protected.

On the whole, therefore, the cotton trade is not looking for a particular large emergence of weevil from hibernation next spring, and whatever the facts in the case may be, has lost much of its fear of the insect. Another season of severe losses from the weevil, might revive apprehensions that the productive capacity of the South has been impaired, but traders who three or four years ago were asking themselves whether the South would ever again produce a full crop, are now wondering whether Southern growers will have the good judgment to curtail their acreage.

Outlook for Distribution

Extremely optimistic views prevail as to the probable distribution of this year's crop at the present level of prices. Whether some of these more extreme views will be realized, is, perhaps, a question. In any case, however, the carryover of cotton from this and previous crops will be heavy, and the feeling here as the new year comes in, is that the trend of prices must depend most largely upon the shaping up of new crop prespects next spring. There has been an extensive campaign for a reduction of 25 or 30% in the acreage, in order to insure a sustained recovery in prices, but it must be confessed that most traders in the New York market are skeptical as to whether such a reduction will actually take place.

The thought is, that prices at planting time will go a long way toward determining the area planted, and with new crop months selling in the neighborhood of 14c, not a few are inclined to believe that the more favorably situated planters will put in another large crop, expecting that a reduction in the older States where large applications of fertilizer are necessary for good results, will give them a profitable market for their cotton.

Possibly the influence of bankers and merchants will operate against over-planting again this year, and all reports reaching the trade indicate that there will be a greater diversification of crops even if the advocated cut in cotton acreage is not fully realized. Taking the cotton States as a whole, there was an increase of about 11% in the winter wheat acreage, which may be partly at the expense of cotton. It amounts to only about a million acres, but it is sufficient to show a trend, and there are reports of increased acreage in tobacco and in other crops which may be of similar significance. Perhaps, if a canvass of the New York trade were made at the present time it would show an average expectation as to acreage which would be somewhere between a decrease of 10 and 15%. Of course, acreage is not the only factor in the making of the crop. Even the last acreage with a yield per acre no greater than in 1921, would mean a yield of under 13,000,000 bales and if there is not an adequate cut in acreage, another big crop may be prevented by unfavorable growing conditions.

RAW COTTON STATISTICS FOR 1926

	1926	1925	1924	1923
January:				
May contracts, New York	20.00–19.28	25.13–23.39	35.65–32.60	29.05–29.06
Domestic consumption, lint	582,315	594,010	576,644	610,375
Exports, lint and linters	749,967	1,076,075	546,253	473,436
Ginned to January 16	15,499,893	13,306,813	9,944,032	9,648,261
February:				
May contracts, New York	19.92–18.70	25.65–24.19	34.97–28.52	30.29–27.22
Domestic consumption, lint	565,118	550,775	507,876	556,924
Exports, lint and linters	556,185	811,838	482,146	359,657
March:				
May contracts, New York	19.09–18.27	26.25–24.22	29.70–26.45	31.59–28.32
Domestic consumption, lint	635,896	583,407	483,928	623,165
Exports, lint and linters	519,732	740,076	332,168	318,210
Final ginning report	16,122,516	13,639,399	10,170,694	9,729,306
April:				
May contracts, New York	19.00–18.51	24.93–23.68	31.95–27.95	30.05–26.90
Domestic consumption, lint	577,678	596,541	480,010	577,396
Exports, lint and linters	516,494	472,555	320,774	259,984
May:				
May contracts, New York	19.14–18.54	24.24–21.65	32.30–20.25	28.85–24.90
Domestic consumption, lint	516,376	531,668	413,649	620,965
Exports, lint and linters	419,459	330,967	326,357	160,368
June:				
July contracts, New York	18.46–17.45	24.09–72.40	30.50–27.75	28.80–25.39
Domestic consumption, lint	518,607	494,083	350,277	542,166
Exports, lint and linters	346,533	217,786	230,979	214,851
July:				
July contracts, New York	18.82–17.50	24.62–22.70	35.40–28.50	27.25–22.50
Domestic consumption, lint	461,743	483,926	346,671	465,575
Exports, lint and linters	366,722	202,468	211,533	171,465
End June condition	75.4	75.9	71.2	69.9
Acreage planted	48,898,000	46,448,000	40,403,000	38,709,000
Indicated crop, new season	15,635,000	14,339,000	12,144,000	11,412,000
Commercial crop, old season	15,655,000	14,962,000	11,322,201	11,182,000
World's carry-over of Am	5,662,000	2,991,000	2,890,000	3,065,000
August:				
October contracts, New York	18.18–16.15	24.45–21.85	25.30–24.05	25.35–21.07
Domestic consumption, lint	500,652	451,236	537,455	491,604
Exports, lint and linters	391,329	315,825	277,641	244,415
Aug. 1 condition	69.8	65.6	67.4	67.2
Indicated crop	15,621,000	13,566,000	12,351,000	11,516,000
September:				
October contracts, New York	18.05–13.91	24.75–22.95	26.25–21.50	30.30–24.86
Domestic consumption, lint	571,105	483,082	435,216	483,852
Exports, lint and linters	794,584	752,324	737,010	689,435
Ginned to September 1	694,877	1,892,549	958,204	1,141,337
September 1 condition	59.6	56.2	59.3	54.1
Indicated crop	15,166,000	13,740,000	12,787,000	10,788,000
October:				
December contracts, New York	14.25–12.00	23.30–18.75	25.90–22.10	31.05–27.12
Domestic consumption, lint	568,532	544,097	532,629	541,825
Exports, lint and linters	1,369,820	1,421,482	946,989	781,722
October 1 condition	61.3	.....	53.5	49.5
Indicated crop	16,627,000	14,759,000	12,499,000	11,015,000
Ginned to October 18	8,722,066	9,518,946	7,615,981	6,409,391
November:				
December contracts, New York	12.73–12.10	21.73–18.96	24.95–22.55	27.70–30.28
Domestic consumption, lint	583,950	543,488	492,233	531,631
Exports, lint and linters	1,486,224	1,206,786	1,306,550	770,002
Ginned to November 14	12,953,708	12,249,935	11,147,524	8,374,148
December:				
December contracts, New York	13.16–11.85	20.58–19.60	23.76–22.52	37.15–33.20
Domestic consumption, lint	605,217	576,216	532,047	461,560
Exports, lint and linters	1,531,297	984,061	1,075,923	845,581
Ginned to December 13	15,542,249	14,826,452	12,796,216	9,809,138
Government crop estimates	18,618,000	15,603,000	13,153,000	10,081,000

Better Balanced Fertilizer

One theory with reference to the expanding tendency of yields since 1921, is that the South has been using a better balanced fertilizer. This theory is to the effect that with the shutting off of potash imports during the war, poorly balanced fertilizers came into use. During the earlier stages of the war period this was not so greatly felt as the ground had retained some of the needed constituents, but it began to assert itself, and while imports of potash were resumed shortly after the end of the war, it may have taken two or three seasons to restore the proper condition of soil.

Reports reecived so far indicate a very severe falling off in the demand for fertilizer this year, sales of tags in Alabama, for the month of December, for instance, having amounted to something less than one sixth of those reported in 1925. This of course, is by no means conclusive, as the planter still has plenty of time to secure fertilizer, but it is in line with and tends to corroborate the reports of a probable reduction in acreage. With a reduction of 10% in area, and a yield equal to that of last season, a crop of approximately 16,800,000 bales might be produced, while the average yields per acre for the past four years applied to this area, would mean a crop of around 15,500,000 bales.

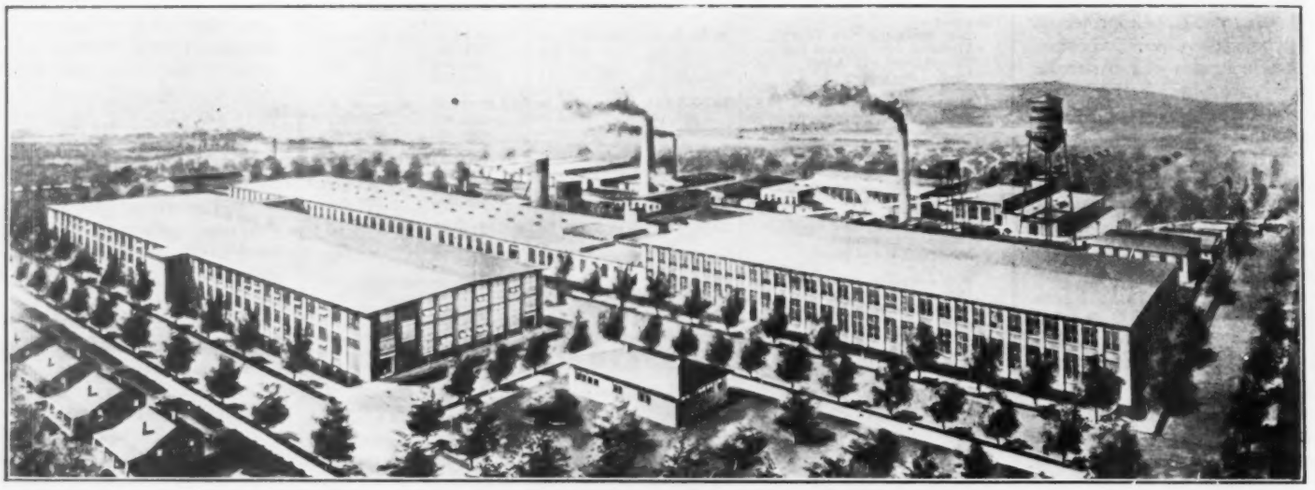
The big crop of last season has been attributed very largely to remarkably good conditions during the late summer or early autumn, and it may be recalled that it was not until after the middle of September that the Crop Reporting Board of the Department of Agriculture found any indication of a crop exceeding 16,000,000 bales. The indication as of Sept. 16 was for a yield of 15,810,000, and from that figure the forecast steadily increased until the final report on Dec. 8, placing the yield at 18,618,000 bales.

Meanwhile the continuance of very unfavorable weather for picking late cotton caused considerable doubt as to whether total ginnings would realize this expectation, and at the beginning of this year, there is probably a greater difference of opinion regarding the probable size of the crop to be marketed, than has ever existed previously after the end of October. Ideas, indeed, range all the way from the Government's figures down to about 17,500,000 bales, and whatever the size of the actual crop, it is believed that a very large percentage of it is of very low grade, with some authorities estimating the amount of untenderable cotton at between 4,000,000 and 6,000,000 bales. This untenderable cotton, while very badly colored and full of dirt or hull fiber, is said to show a very good staple and has been selling freely in the South at low prices. No hedges are being sold against such cotton, however, and consequently the only pressure against the futures market is that which has been exerted by the crop of tenderable grades.

The end-season distribution of the crop will depend to some extent, no doubt, upon the shaping up of new crop prospects and the differences between present crop and coming crop values as noted in the futures market. At present the late months are selling at premiums, and so long as these premiums are maintained, it is hardly likely that there will be any check to the rapid distribution which has been going on since the beginning of the season. Low prices have had a stimulating effect on the world's demand for cotton goods, with the result that goods trade is broadening and mill operations are increasing. Moreover, the world's trade has also the opportunity of laying in a reserve supply of American cotton at prices believed to be under the average cost of production, for the first time in many seasons, and the chances are that if the South does not overplant again this spring, a good part of the in-

TABLE II

	1926–27			1925–26		
	Lint	Linters	Lint and linters	Lint	Linters	Lint and linters
Supply:						
Stock, August 1	3,542,560	281,529	3,824,089	1,609,848	197,614	1,807,462
Imports	300,000	.....	300,000	314,200	.....	314,200
Production	18,600,000	1,100,000	19,700,000	16,008,654	1,044,495	17,053,149
City crop, etc	200,000	.....	200,000	160,542	.....	160,542
Total	22,642,560	1,381,529	24,024,089	18,093,244	1,242,109	19,335,353
Distribution:						
Consumed	2,829,456	334,666	3,164,122	2,598,119	346,809	2,944,928
Exports	5,511,953	61,267	5,573,220	4,647,136	33,342	4,680,478
To January 1	8,341,409	395,933	8,737,342	7,245,255	380,151	7,625,406
Left for seven months	14,301,151	985,596	15,286,747	10,847,989	861,958	11,709,947
After January 1:						
Consumed	3,970,544	535,334	4,505,878	3,857,733	456,957	4,314,690
Exported	4,888,047	88,733	4,976,780	3,397,696	70,737	3,468,433
Destroyed	50,000	2,000	52,000	50,000	2,000	52,000
Excess supply over distribution	.....	.....	.....	.....	50,735	50,735
Total	8,908,591	626,067	9,534,658	7,305,429	580,429	7,885,858
Stocks, July 31	5,392,560	359,529	5,752,089	3,542,560	281,529	3,824,089



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creased carryover will be held in consuming markets at the end of the season.

Both domestic mill consumption and exports have been running well up to the highest records of previous years so far this season, and it is rather generally expected that the export movement will equal or exceed the pre-war average of around 9,250,000 bales. In fact, there are some who are comparing the present export movement with that of 1911-12 when about 11,000,000 bales were exported between July 31, 1911, and Aug. 1, 1912. Table II will show the supply and distribution of cotton for the first five months of this season, based on the Government's estimate of the present crop and an estimate of probable imports of foreign cotton during the entire season. These figures are compared with similar figures for the same period last year, and with last year's figures for the last seven months of the season.

In the above table we have assumed that domestic mills will consume about 6,800,000 bales of lint cotton and 870,000 bales of linters for the season and that our season's exports will aggregate about 10,400,000 bales of lint and 150,000 bales of linters which is, perhaps, improbable. On the basis of that assumption, however, it would appear that if supplies have been correctly estimated, we would have a carryover in this country of approximately 5,392,560 bales of lint cotton including foreign growths, or 5,752,089 bales of lint and linters, which would compare with 7,230,639 bales at the end of the season 1921-22, which was the high record.

These figures, of course, both with reference to domestic consumption and exports for the balance of the season are entirely fanciful and are only given here as a reflection of present sentiment with reference to probable distribution rather than as a serious estimate of the probable figures. The expectation of large takings abroad, however, is based partly upon reduced estimates of the East Indian crop and the relative steadiness of East Indian prices so far this season. Moreover, Bombay has been buying cotton in this country in a more important way than ever noted previously, and it may be that our exports this season will include about 250,000 bales to India.

Another factor which is facilitating the distribution of this year's American crop is the very low prices for the low grades of good staple. Mills are said to be turning more and more to these qualities which spun into greater waste and it is likely that following the low grade crop of last season, they are now in a better position to clean and handle these low grades of good spinning staples.

The World Crop

While the American crop, if correctly estimated by the Department of Agriculture, shows an increase of about 2,500,000 bales over that of last season, it is doubtful whether the world's crop of all kinds will be much more than 1,800,000 bales in excess of the production of 1925. Table III, with reference to the world's crop outlook, is compiled from the latest figures published by the Department of Commerce, with a rough guess at the crops of China, etc., for this season which is based largely upon reports that the Chinese crop will fall considerably short of last season's.

TABLE III

	1925	1926
United States	16,104	18,618
India *	4,660	4,269
Egypt	1,650	1,497
Russia	737	756
Chosen	125	154
Mexico	202	379
Anglo-Egyptian Sudan	110	120
Greece	15	35
Morocco (French)	1	1
Bulgaria	2	3
Algeria	6	6
Ecuador	6	6
Total above countries	23,618	25,844
China	2,114	
Brazil	793	
Peru	194	
Turkey	126	
Uganda	136	
Union of South Africa	25	
Nigeria	30	
Tanganyika	17	
Australia	7	
Paraguay	10	
Syria	14	
Cyprus	3	
Total above countries	3,469	Est. 2,969
Total all above countries	27,087	28,813
Estimated world total	27,900	29,700

* First estimate, incomplete.
Ecuador and Peru unofficial.

This situation as to surplus supply has been reflected by the decline which has carried the market off from the 18 to 20c level at the beginning of this year to about 12c at the beginning of December. Taking into consideration the present buying power of the dollar this price of 12c a pound is the equivalent of about 8¼c in pre-war days, which as may be noted by reference to tables given above, is under the average price for the last four years preceding the war. The reactions of this decline on production in this country and abroad have still to be determined. It would seem to discourage cotton growing on the part of all but the most advantageously situated farmers but it is not unlikely that continued efforts to develop new fields will be encouraged in the British colonies.

England and the New Crop

(*Continued from page* 146)

effect of getting raw material at under production cost. We have had a striking example of what this can mean to the manufacturing side since we treated so cavalierly the growers of the 1914 crop, and we should be mindful to avoid a repetition of the circumstances which caused cotton to be so scarce and dear as it was up to twelve months ago. The circumstances, we know, are vastly different, but even so, I am not one to gloat over the prospect of a trade success acquired at the expense of the American cotton grower.

While cheap cotton must be an excellent thing for everybody in the long run, we have to remember that stability in price may be of much more importance than cheapness. During my long career in the industry, I have seen very bad trade at times when the raw material has been unusually cheap and I have, on the other hand, known a highly flourishing trade to exist when cotton has been at a high price. The *Empire Cotton-Growing Review*, in its current number, emphasies this point in giving the reasons why manufacturers desire stability in prices above all things. It states that "six penny cotton without stability of price is not so good from his (the manufacturer's) point of view as seven penny, or even eight penny, with stability."

Still Advocates Cotton Reserve

A year ago, when writing for the Annual Review Number of TEXTILE WORLD, I dealt, at the editor's suggestion, with the reasons why we must have a reserve of cotton if we are to keep supplies at an adequate level and prevent speculators from playing havoc with all our calculations for keeping mills running regularly and prices on such a plane as will ensure a constant and unvarying demand from consumers of the finished goods. Since then, as a result of a second large crop, steps have been taken in America to create some such reserve, though less for the sake of avoiding booms and slumps and frustrating the cotton gambler than of keeping raw material prices at a remunerative level. With this aim I am in entire sympathy, as I stated clearly and emphatically in that article, but I cannot say that I altogether agree with the restriction of acreage policy with which it is coupled. As I pointed out, the world will not always be able to do with short supplies of its cotton clothing, and it must be getting nearer and nearer to the time when the necessity to economise will not require to be observed. When that time comes (and it may well be with us before another cotton crop is harvested) the productions of all the cotton fields in the world will not, as I have so often stated, be more than the trade will be able to absorb, or the wearers of cotton goods to consume.

Lower Costs and Better Quality

Still, I think the planters, bankers and others who are just now urging the adoption of this restriction policy would do well to ponder the statements of Dr. Cox, the director of the University of Texas, who, in a speech over the radio in November last, made some wise and thoughtful observations on this question. I notice, from a copy of the speech supplied to me, that Dr. Cox is not in sympathy with a great many of the proposals now being made in America for the solution of the cotton problem. He does not condemn the movement to hold part of the supply off the market, but that alone, he thinks, will not bring the necessary relief to the farmers. It must be accompanied by more vigorous merchanting of their product, and he is convinced also that farmers could increase their profits by lowering their costs of production and improving the quality of their raw material. He has, he says, ample evidence that these things can be done.

Moreover, Dr. Cox does not believe in a big restriction policy—does not, indeed, believe that a 25% acreage reduction is possible—pointing out that according to the pre-war trend of trade expansion, the normal cotton production of the United States at the present time should be approximately 18,000,000 bales, and goes so far as to say, "I believe that we, as well as the rest of the world, would be much better off if we would produce the 18,000,000 bales at a cost which would readily permit it to find its way to ultimate consumption."

It heartens one to see with what confidence Dr. Cox looks to the future, but one is inclined to doubt his statement that the spindles of the world can easily manufacture more cotton than has been grown during the past season, and also his contention that if financed satisfactorily all the mills of the world would now be running at full time. It would seem that he underestimates the havoc done to cotton machinery, actively and passively, during the years of the war, and is rather too optimistic, on the other hand, as to the recovery that has taken place in the purchasing power of the wearers of cotton goods. No one doubts that the demand for cotton and cotton goods is capable of great expansion, but outside the flourishing United States one doubts whether any great success would at the present time attend a "Use more Cotton" campaign.

Early Advance Forecast

As I stated earlier, it is unreasonable to expect that we can do as much business as heretofore with such an enormous market as that of China paralysed by revolution, not to mention some other markets which are known to be still sadly impoverished. Under these circumstances, I consider that we shall for a little while to come be forced to restrict production on the manufacturing side, at all events. If, as Dr. Cox states, means are available for adequately remunerating the planter without raising the price of cotton to any extent, no one will be more pleased than I shall, for were we to allow the growers of cotton to be ruined in such times of plenty, it would be a very grave matter both for the manufacturing industry and for consumers all over the world. Cotton, fortunately, is not like most other agricultural crops. It can be stored safely for years without deterioration—indeed, I myself have used cotton more than five years old.

Of one thing the grower may be certain, and that is that cotton will not long stop at its present price if the expected demand for cotton goods materialises, so that there is more than a probability that before the present year is out he may be seeing his own again.

L. B. GOFF, President
E. K. SWIFT, Vice Pres.

B. C. CHACE, General Manager

ED. E. LEONARD, Treasurer
S. E. JACKSON, Asst. Treas.

CROWN MANUFACTURING COMPANY

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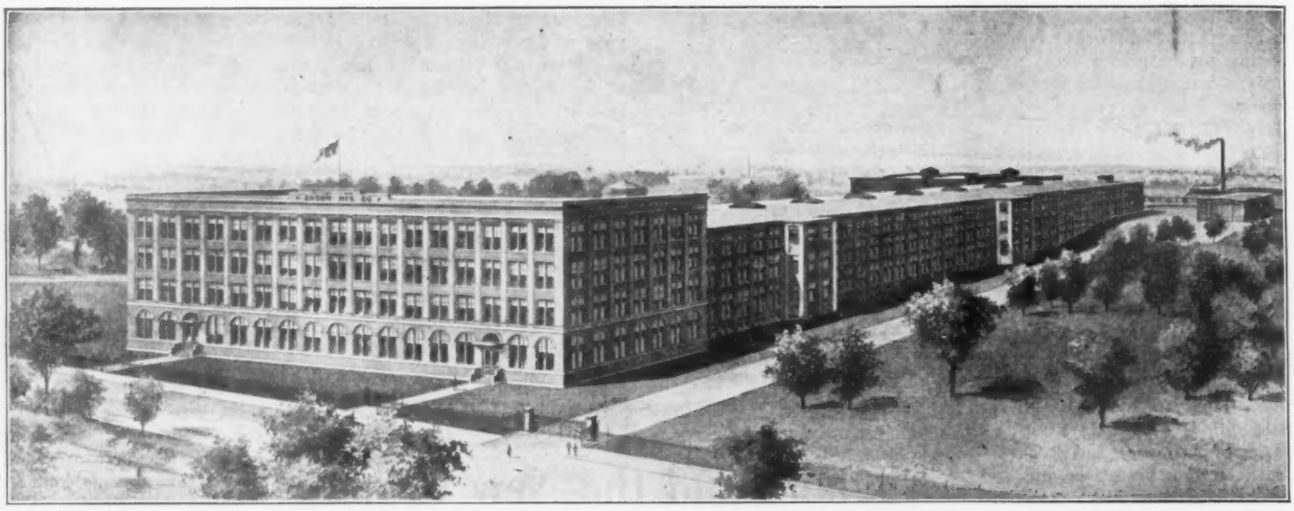

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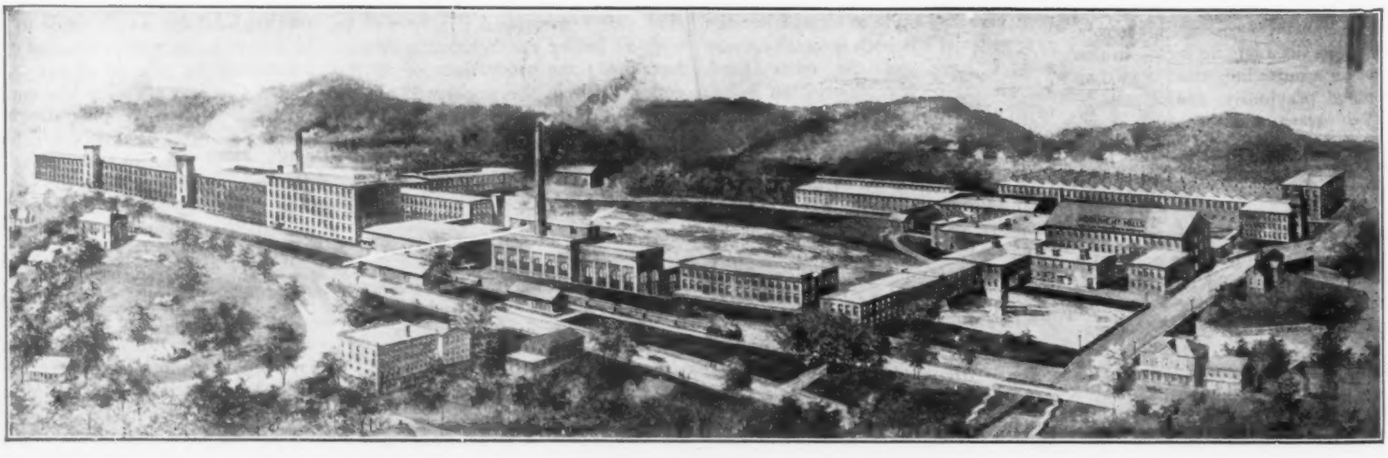

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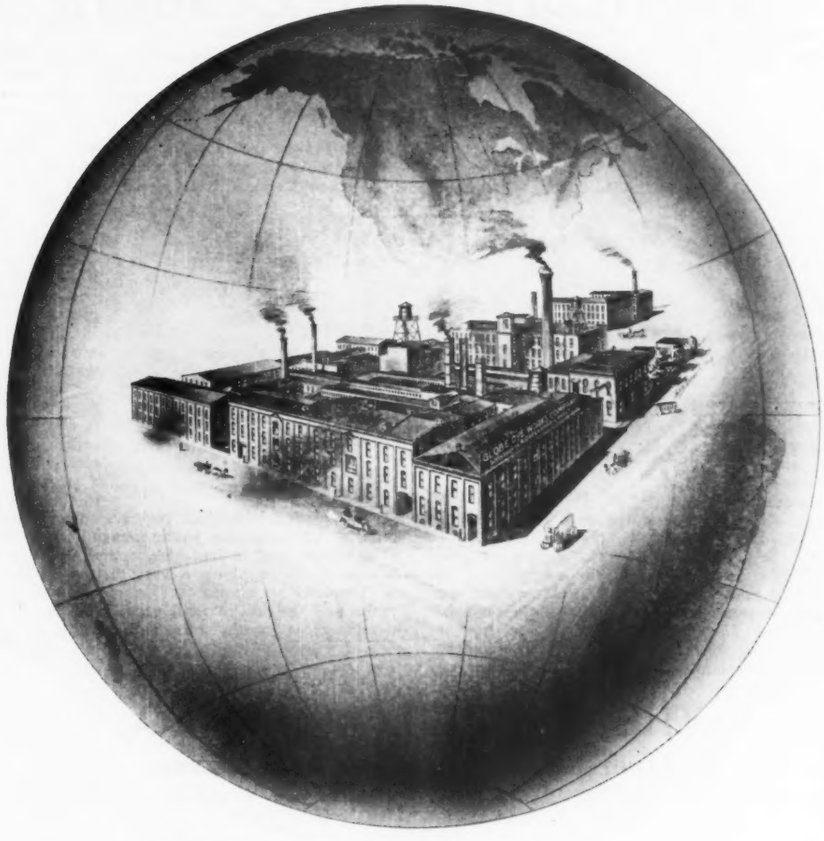

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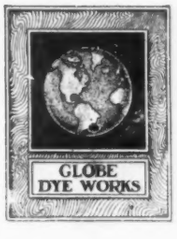

Pioneers and Leaders

In every branch of American Industry there is always found some one outstanding organization, which as the result of giving service and satisfaction, is recognized as a leader in its field. The cotton yarn processing industry possesses such an organization in THE ROBERT D. MASON CO. Founded in 1805, this Company was the original American job dyehouse. It has been in continuous operation ever since, serving a constantly increasing clientele. With this long and valuable background of experience is coupled a plant of the most modern type, and a technical organization thoroughly trained in the most approved processing methods. As a result of this most unusual combination of training and experience, THE ROBERT D. MASON CO. *renders* a processing service that cannot, it is felt, be approximated elsewhere. The history of this organization has been one of continued and uninterrupted growth, and the adage that "Nothing succeeds like success" seems to be well borne out by a study of the results obtained by this Company; for during the rather unfavorable conditions existing in the industry during the last few years, the Mason Co.'s business has gradually increased until the existing manufacturing facilities had to be substantially expanded if the organization was to continue to serve the trade in the usual satisfactory manner.

About a year ago, therefore, the problem of how this expansion could be best achieved without interfering materially with the operation of the plant, engaged the attention of the management. Engineers were engaged to work with executives of the Company, with the result that the plan that has been put in effect was evolved. This plan called for the entire rearrangement of a great deal of the plant, and the moving of entire manufacturing departments. Not only was the manufacturing capacity increased and new machinery and equipment of the very latest approved type installed, but all existing equipment was completely revamped in order that the processing work produced should be the very highest grade and calculated to give the utmost satisfaction to the trade. Since THE ROBERT D. MASON CO. has always specialized in dyeing fast colors for all purposes, a considerable addition to the machinery in the dyeing division of the business was necessary, due to the increasing demand for these types of colors. In fact the dyeing capacity of some divisions of the business has been more than doubled, and every machine and device installed is of the very latest and most approved type for the individual job. Throughout the plant it has been and is the constant endeavor to develop the best methods of manufacturing as a means of more quickly filling orders.

One feature of THE ROBERT D. MASON CO.'s organization is its constant watchfulness for new dyes and for better methods of application of existing dyes. The Company feels that in addition to carrying out the processing orders of its customers, it cannot completely fulfill its mission unless it is in a position to advise the trade relative to the best dyestuffs and the best class of dyeing for individual requirements. Particularly is this true at the present time when the public demand for styles and colors is such a variable factor, and it has been found that the laboratory division of The Mason Co. is supplying a very distinct need in the trade. This Company is completely equipped to dye, bleach and mercerize all kinds of cotton yarns and threads in both warps and skeins, dye artificial silk, and also wind yarn on quills, tubes and cones.

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Cooperation Taken as Abuse-Cure in Men's Wear

Hopes of Reviving By-Gone Methods Given Up as Clearer Recognition Is Had of New Needs—Achievements of 1926 Point to Greater Success and Profit in 1927—Style Has Stronger Influence—Outline of 1926 Openings and Price Trends

CLEARER recognition has been given during the last 12 months than hitherto to the fact that the men's wear market is in a state of change. In other years of the recent past, there had been much anguish over strange conditions which were regarded as temporary and much longing for a return to what was called the normal. It is now conceded that affairs are shaping themselves into a new normal, which is not at all the normal of 10 or 20 years ago. The new men's wear market seems to require more constant planning and watching to achieve highest success than was necessary in years gone by. Changes come with greater rapidity, and the buying of distant future deliveries cannot be effected on the same large scale as it once was.

With the changes in needs, have come changes in facilities. Mill executives are shaping their organizations to meet the peculiar problems of the day, and numerous devices are being tried to guard their lines against the sharp competition of the general market. Cooperative endeavors have been instituted to render more harmonious the relations between buyer and seller and to benefit the business done by both. The year has seen the formation of a code of ethics and a code of practice by the American Association of Woolen and Worsted Manufacturers, the development of a legal department, the recognition of the great value of the Mutual Adjustment Bureau, and the seeds planted for a representative body, the Wool Council of America.

An Era of New Merchandising

New ideas in merchandising have been developed during the year some of which promise to make a deep impression. For example, one of the problems for a mill making high grade branded goods was to prevent its line being made a football in a secondary market, smaller users cutting the price for the publicity it would give them and thus unsettling the market for the regular handlers of the fabrics. In one quarter a plan was devised to restrict distribution of high grade branded goods to certain recognized houses, thus eliminating the irresponsible handling of the line and the harmful cutthroat competition which that sometimes developed. In other instances selling agents have openly requested their customers not to slash prices indiscriminately on their branded fabrics since the makers of the goods know that they will get the steadiest repeat orders from houses which have been able to handle their line year in and year out at a profit and such houses will be favored by sellers in the future.

The confining of styles to particular customers has spread in various quarters of the market. This policy has been adopted during the last season, on relatively small orders, such as two pieces to the line. It is stated that one selling house sells its entire product to a limited list of customers, confining styles to each customer. The idea is one which has been imported from England, where it is said that mills are willing to make up one piece of a style. Clothiers and other distributors regard this plan as an assurance of something exclusive. However it is interesting to note that it does not meet with universal approbation, for there are clothiers who prefer open line styles and who believe that in buying that way they are able to give the newest and most wanted materials to their customers.

Several of the manufacturers of better grade goods have during the last 12 months offered their lines already shrunk and ready for the needle, without extra charge to the buyer. The advantage in this arrangement is that the mill may apply a highly perfected form of shrinking adapted particularly to its goods, and the clothier will probably be better satisfied through the uniformity of the results.

Machinery Scrapping Campaign

An interesting development, quite typical of the times, came into prominence about the middle of last year. This was the machinery scrapping campaign backed by a group of manufacturers who built up a pool for the purpose of buying machinery when offered at auction at less than 30% of the original cost. Behind the movement was the conception that the industry was constantly over-producing if operated on a full time basis, and that there was too much machinery ready to run at any time to permit any part of the industry getting a full legitimate profit. There was also the apprehension of a ruinous competition from new manufacturing organizations which might be built up by the purchase of equipment at bankruptcy sales where substantial machinery is selling for a small fraction of its original cost. This machinery scrapping group was conspicuous at one mill auction in July, but did not appear to operate again through the year because it was said auction prices advanced to something above the dead line of 30% of original cost figures.

The Pains and Pleasures of Style

Style has been one of the most discussed elements of the market through the year. It is difficult now to catch the right style even a month or two ahead, so style emphasis has sounded the death knell of long future operations. Many selling houses have sought a wide distribution of reference samples and orders for sample pieces, in the hope that their chickens would later come home to roost. Because of the time taken to carry goods through the process of manufacture, it is necessary that someone take a risk on styles and it seems to be now the mill which must shoulder the largest portion of that burden.

Because of the financing costs and risks involved, selling agents argue that goods sold from stock should carry a premium to compensate for those risks, whereas as a matter of fact the reverse is nearly always true, and stock goods sell at sharp discounts save in rare cases. This was particularly evident last spring when disconcerting price cuts were made. This policy regarding stock goods encourages the clothier to await such offerings, and weakens the fundamentals of the market. Throughout the year sellers have sought to rouse the buyer by a combination of brilliant styling and cut prices, though a moment's consideration shows that these two elements cannot reasonably go hand-in-hand. There are plans on foot for style cooperation with clothiers which holds forth high hopes for beneficial development.

Cooperative Advertising Dropped

As the result of a cooperative movement involving five associations in the raw wool, yarn and cloth industries, an effort was made through the spring and summer of last year to promote a cooperative campaign of publicity. The original plan involved a broad survey of the needs of the situation, and, when they were determined, there was to be developed a suitable advertising and publicity campaign. It was one of the fundamental conceptions behind this plan that the average man dresses at the lowest level permitted by his wife and business associates. It was believed that a change in this habit by developing greater clothes consciousness among men, might set a premium on better dressing and so broaden the market for good clothing. These plans did not mature however, but from their seed sprang the Wool Council of America, a body which has not yet been put into operation, but which has plans for handling cooperative endeavors somewhat along the lines of the newly formed Cotton-Textile Institute.

When to Open?

The proper time for regular seasonal openings was under discussion often during the last year, with clothiers, through the Manufacturing Clothiers' Research Board, advocating early showings but with individual clothiers showing reluctance to place initial business even when lines were opened late. The research board last spring recommended the following dates for fall openings: Jan. 1, overcoatings; Jan. 15, woolen suitings and staple worsteds; Feb. 1, fancy worsteds. They have since modified this proposal by asking for a Jan. 15, opening of overcoatings and staple suitings, and a Feb. 1 opening of fancies. Their proposal for spring openings set July 15 as the date for woolen suitings and staple worsteds, and Aug. 1 for fancy worsteds.

It is doubtful whether opening time can ever be governed by fixed schedule. Many diverse elements are involved in the showing of new lines. Thus the naming of fall prices in January has a pronounced effect on the prices for the final duplicate business for the ensuing spring and similarly the spring opening in July affects deliveries of fall goods after that date. With this situation in mind, some clothiers do not extend their orders for one season beyond the opening dates for the next season, particularly if there is any hope that the market may decline. This would not be a factor at the time of a strong rising market, nor would there then be evident many of the other petty difficulties which surround the market at the present time when it barely maintains its equilibrium. It must be remembered that the general trend over the last three years has been downward, and many current problems are predicated on continuance of that trend.

As an example of buyers' use of this trend when spring duplicates were placed last November buyers took care to specify deliveries before February, and despite the fact the market was considered to have a generally fair prospect, considerable duplicate business was withheld until the time of the fall 1927 openings which are now current. Only a few mills which happened to be fortunate enough or enterprising enough to have developed an excellent reputation, were able to sell themselves as far ahead as they wished. Few of these went beyond March commitments.

The $25 Suit

The last 12 months has seen a broadening of interest from goods around $2.00 a yard to materials considerably higher in price. At the start of the year clothiers centered their preparation on $25 suits, and mills realizing this to be the case prepared the most carefully styled fabrics in the proper price range which is around $2.00. It was a matter for comment that better styles appeared in such materials than in the materials around $2.50 and $2.75. Mills which turned out goods under $3.00 a yard concentrated their energies on the lower priced numbers, and as a result tailors-

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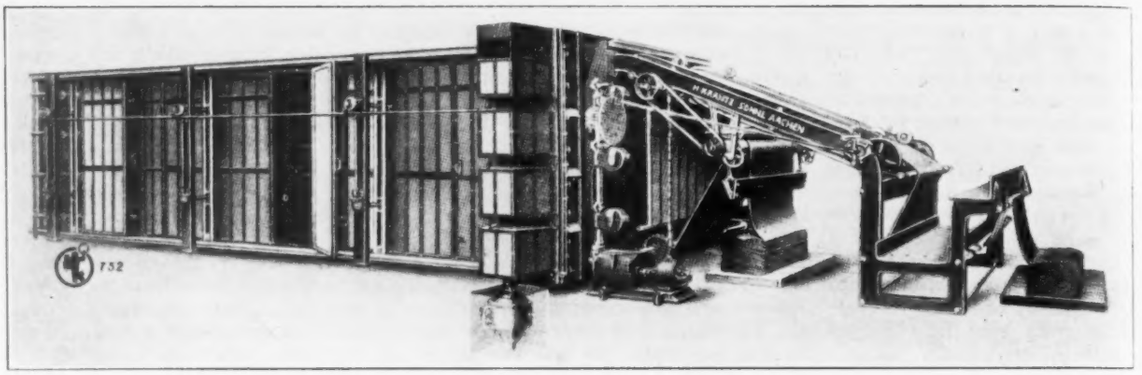

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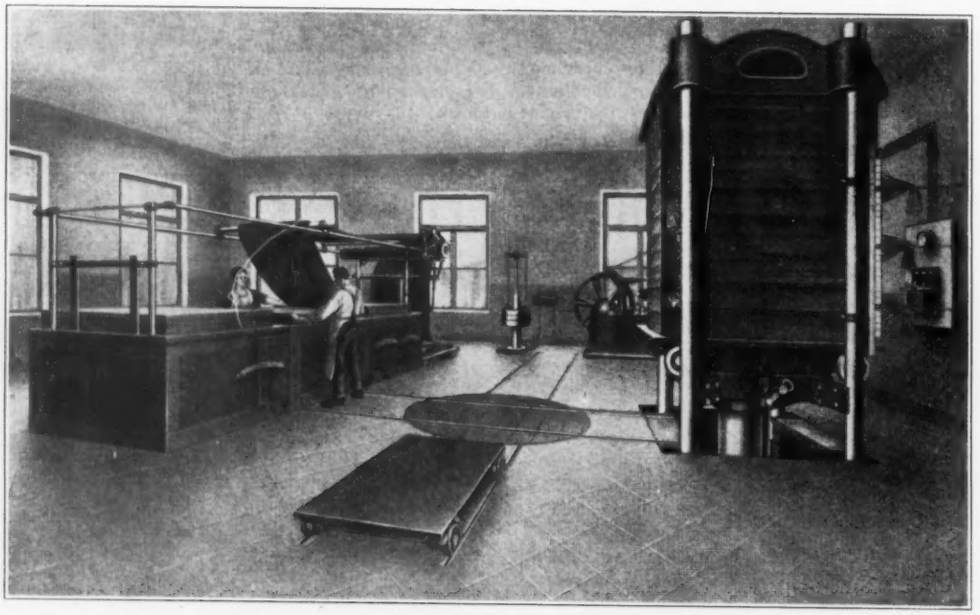

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to-the-trade made frequent complaints that they are at a great disadvantage since they paid slightly more for their fabrics yet rarely got as good style as was found in the cheaper sorts used chiefly by the ready-made clothing trade.

The whole matter of cloth value in garments at fixed retail prices was more unsettled through last year than the above mentioned relations would suggest. One selling agent saw his $2.00 cheviot in a $60 suit. It is quite evident that competition and established reputations are the only guards the consumer has in assuring him adequate cloth value as compared with the price he pays for his garment. Good cloth value is the retailer's only hold on his customer. That higher-priced clothing had begun to improve was evinced last fall in the call for fabrics from $3.00 to $4.50, and goods of this class are now better cared for than they have been for a number of seasons. Worsteds benefited from this trend and there has been a decidedly new call for a heavier weight goods. Broader interest in 16 oz. worsteds is regarded as highly significant by students of the market and many anticipate a reaction away from the wearing of the same weight spring and fall to use of heavier suitings in the cooler part of the year's cycle.

The Fall 1926 Opening

When the American Woolen Co. made the first showing in 1926 of goods for the fall of that year, it was estimated that raw wool was 20% lower than the year before, worsted yarns 15% lower and mill wages 10% lower. The American opened overcoatings and staple woolens and worsteds on Feb. 1, and fancy woolens and worsteds on Feb. 22. Students of the market estimated that overcoatings in general were 15 to 19% below the year before, woolen suitings 13 to 16% below and worsteds 9 to 12% below. On comparable fabrics the prices were the same or a shade lower than the opening for spring, made in August, 1925. The American's pivotal serge, 3192, was priced for fall 1926 at $2.52½, the same as the spring price but 22½c below fall opening of the year previous. The American's unfinished worsted, 9613-1, was priced at $2.32½, 10c below spring and 42½c below the year before. The American's overcoatings ranged from $1.35 to $6.67½ compared with $1.45 to $8.57½ the year before.

Through the spring the market was unsettled owing to the British industrial strike, the uncertainty on wool prices, cancellations of orders, etc. The Jericho wool clip in Utah sold early in May at 34½c, against 42c the year before and after an asking price at 38c had brought no takers. Spring duplication was disappointing, and in May and June mills unloaded stock goods at cut prices which hurt market confidence. As much as 20% off, with distant dating, was reported in some quarters. A number of clothiers found their banking facilities tighter than heretofore because of the failures in the clothing industry which made bankers scrutinize their loans in this field more closely than usual. Although it had been thought that with the severe competition around $2 the advantage would go to woolens rather than worsteds, such was not the case and business was fairly well distributed.

The Spring 1927 Opening

On July 7 the American Woolen Co. opened all staple worsteds for spring and on July 12 all remaining tropicals. Prices in general were 10% below spring of the year before, and many good worsteds were offered near the $2.00 mark. Business in tropicals through the market generally was reported good. The American's tropical worsteds ranged from $1.47½ to $2.32½, with the majority under $2.00. The American's serge, 3192, was priced at $2.27½, 25c below the year before, and the unfinished worsted 9613-1 was opened at $2.10, 32½c below the year before. The Cleveland Worsted Mills priced their 78 blue serge at $1.40. The American Woolen Co. opened fancies on Aug. 11, showing reductions of 7½ to 11% from the year before. The Hird vigoreaux No. 600, was priced at $2.07½ against $2.27½ the year previous.

Prices were irregular and buyers had a wide range of intrinsic values laid before them. They used good judgment and the best bargains were most quickly sold. The higher grade goods showed better drawing power than for some time, and many buyers took advantage in the reduction in price to use better grade materials instead of cutting the prices on their clothing. During September an active spot demand cleared out stocks of fall goods and strengthened the situation.

Several Advances in October

In October a few lines for spring were advanced in price, 5 to 10c per yard, and certain lines were withdrawn from sale because under order the rest of the season. Much primary market opinion opposed advances at this time on the ground that it was unwise to take any step that might have to be retraced, but some mills which had gone the limit on low priced materials found that they had to pay more for raw wool and consequently had to ask more for their fabrics to avoid a definite loss.

The Style Trends

From the start of the year it was evident that style demanded highly varied and diverse fabric effects. Throughout 1926 there was intensive development of geometric patterns in fancy weaves. Many of these were derived from sport wear patterns refined and made smaller for business use. Herring-bones, step-ladders, diamonds, squares, broad stripes and fancy diagonals, all came in for a share of the business. Such fabrics often served as the background on which over-plaids and stripes in contrasting colors were laid. Early in the year it was apparent that the darker shades would again be popular for fall, particularly grays, blues, and red-browns.

Overcoating colors for fall, 1926, were uncertain through most of the year. Light colored lines were prepared, but by the close of the season the darker colors had the upper hand and blues in particular made a strong finish. All sorts of fabrics, including through-and-through weaves, fancy backs, hard-faced and soft-faced goods, tweeds, chinchillas, etc., all now have their place among coatings.

The cheviot vogue in the fall of 1925 was thought to presage a revival of staple worsteds. This it did not do, but rather the trend was toward fancy weaves in cheviots with subtle variations from the standard colors.

Broader Use of Color

The market seems to have evolved away from the one color season and now monotonous uniformity of a limited color range has given place to harmonious variety with almost every color in use. Style has become such a selling point that piracy has again been rampant and the copyists were unusually busy through 1926. There has even been talk of withholding best styles for supplementary openings to avoid the effects of this abuse.

Three and four-ply cloths have come to the fore in the last few months. They are crisp durable fabrics which took their origin in tropical weights where the plied strength was very necessary. The idea has been taken up in heavier fabrics and with spring business favoring better goods, it promises to be a feature. Fancy twists have lately been another prominent style, and vigoreaux numbers are taking a new lease on life.

Styles in cheap goods have lately been perfected, so that expensive lines are no longer preeminently superior except to the trained eye. The $25 suit has become a great battle ground and will probably continue so through this year. On the other hand more $40 to $60 garments are in preparation than a year ago, and this higher priced field is in better condition than for several seasons. There is a dearth of goods for the $30 and $35 suit which will doubtless be corrected as the season progresses. Cooperative means for solving trade problems will probably be the feature of 1927 and its beneficial influence is expected to work much to the advantage of the men's wear industry.

Fight Women's Scant Wool Use

Aim to Reinstate Worsted as Popular Dress Material—Coatings Were Mainstay of Trade in 1926

DESPITE individual successes, the women's wear market as a whole counts 1926 among its disappointing years. Unquestionably the total yardage of woolens and worsteds which have gone into feminine apparel during that year was as small as in any similar period in the last decade. Competition with silk and cotton goods as materials for use in dresses has been to the disadvantage of wool goods. Personal comfort has called for light weight fabrics for dressmaking, and style has decreed the use of cotton and silk.

Wool goods in women's apparel found their best field in coatings. Even here there was competition and the increased use of all-fur coats is not to be overlooked. Dissention in the cutting-up industry which resulted in a strike in the New York market did not help matters, though it is doubtful whether it actually curtailed consumption appreciably. In a sense it was balanced by the strike among the Passaic worsted mills which lasted almost through the year.

Market Seeks New Lines

In looking forward to the new year no particular shadow appears on the horizon, but on the other hand there is no real optimism or enthusiasm evident. There will be, as there have been in the past, many energetic attempts to return worsteds to a more prominent place in women's dresses and to this end there is considerable development of very sheer goods, which, from the weight standpoint, compete closely with silks and cottons. Pattern effects on these goods will be designed to match the whim of fashion and a number of mills are hopeful that with skillful promotion behind their offerings they can score individual successes.

Of the new developments of last year the vogue for light weight worsted coats is worthy of note. It resulted in consumption of considerable yardage of twills, and engaged machinery which would otherwise have been idle because of the scant demand for such goods for suits and dresses. An allied development has been the three piece costume, which has made extensive use of worsteds in its most successful versions. This in turn has evolved into the composé costume which involves the use of various fabrics or various colors of the same fabric. Although this work may be done with silk, it appears to have greater possibilities when wool goods are used and the styling departments of several prominent mills have spent their energies well in devising associated lines which may be taken in conjunction for the composé effect.

Find Outlet in Men's Wear

The abatement of interest from the women's garment trade has caused many mills which for years have been exclusive makers of women's wear, to turn to the men's wear field for an outlet. In the past there have been such movements, but they have been obviously emergency affairs and have been practical only where the product was a staple or semi-staple which was almost interchangeable between these two fields of use. For example, when serges were selling well in men's wear but not in women's wear, production

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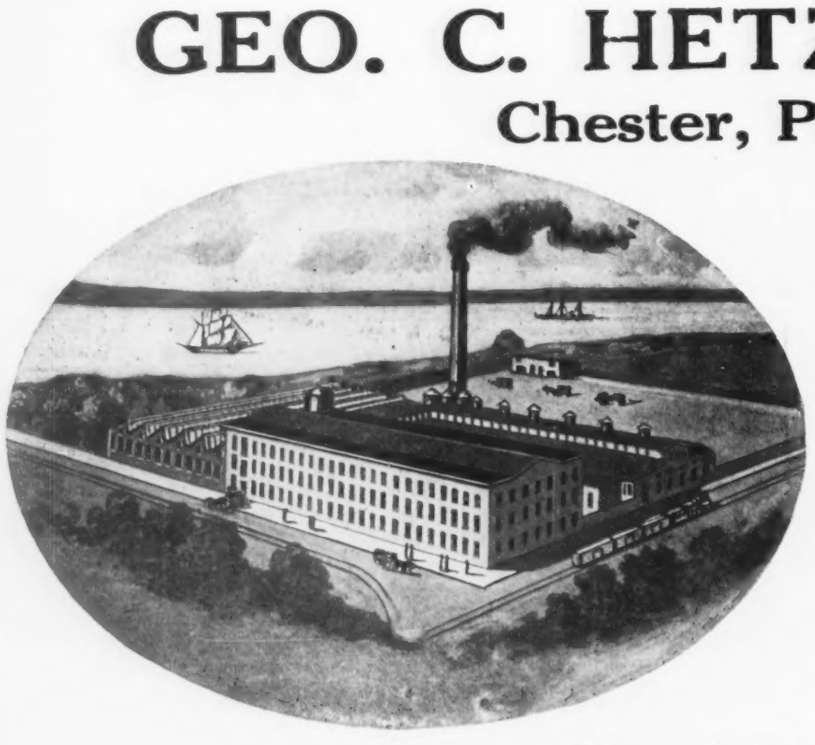

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in the latter field was easily transferred to the former. The incursion which women's wear mills have taken into the men's wear field during 1926, however, has been of a different character. New departments have been established; new styles suitable for men's wear have been designed; special salesmen have been obtained to cover the clothing industry, and the movement has been given an air of permanence which distinguishes it from similar efforts of the past.

In order to introduce these lines into their newly chosen field, particularly attractive prices had to be named, and it is not likely that much profit has been netted by the innovation so far. This has been aptly characterized as "buying their way in" and it may be that succeeding seasons will find an expansion of this trade at prices which will be more worth while. Needless to say the men's wear mills have not welcomed this additional competition, as recent seasons have been hard enough without pressure from still another quarter.

Efforts to Get Initial Orders

The opening of women's wear lines for fall, 1926, was begun last March, and extended over a six weeks' period. Effort was made to encourage users to commit themselves as much as possible on the more staple lines of piece dyes, leaving the color instructions open for details to be supplied later in the season. Pacific, Arlington and Juilliard showed their fall goods before the American Woolen Co., the latter not making its offering until March 16. The most immediate benefit from the opening was reported to be more substantial interest in spring goods. Because of the labor difficulties in Passaic, it was evident that fewer goods could be counted upon from that source than formerly, and as a result other makers of similar materials found their market improved.

Extreme variety in worsteds typified the fall opening, the new lines including serges, kashmirs, flannels, voiles, crinkled crepes, Poiret sheens, twill cords, reps, luster twills, poplins, rayon striped goods, shepherd checks, rayon and wool mixtures, etc. In colors, also, variety had the call, and many houses announced more extensive color assortments than ever before in their history. In a general way the reduction of prices on repeat numbers ranged from 5 to 18%.

Extensive Coating Display

In the coating field after several seasons of short-lived promotion of other fabrics the market returned strongly to the pile sheen type of goods which had been originated by the bolivias of many years ago. Pile sheens were shown in tremendous variety ranging from cotton warp goods which were priced in some instances below $2.00 per yard to the finest cashmere effects which ran to over $10.00. Between these extremes lay the many varieties of fabrics with wool, worsted, rayon and mohair used for the face.

Because of the irresponsible copying of trade names many of the producers first showed their fabrics under style numbers only, several announcing their fabric names later in the season.

Fancy coatings, largely of plaid designs in multicolor effects were also shown, and early in the season gave promise of more extensive growth. They showed interesting use of sport effects, revised and made over into fabrics for general utility wear. As the season went on these goods took deeper root and proved good sellers in retail circles.

Many Colors Accepted

After the first spurt in March, the spring season in women's wear developed slowly. Among the colors favorably considered were the wine and old rose tones, also tans, grays, greens, blues and navy. Many houses found the pastel shades to be quite generally acceptable. The fact that so many colors proved saleable for the moment took color as a prime style factor off the center of the stage. It was apparent that women refused to uniform themselves in one outstanding color as they had done in a number of preceding seasons. The change was an advantage for the trade in that it reduced the probability of a dead stock in case the color passed out of vogue over night. It also gave the ultimate consumer opportunity to exercise her individual taste rather than using some color unsuited to her just because it was the style of the moment. Various style shows through the spring attempted to crystallize opinion upon a group of approved shades so that the buyer might see a way out of his dazzled uncertainty on the color question.

Through the spring, coatings for the fall season held the center of the stage. The many fancy coating fabrics shown by mills clearly made a more favorable impression on buyers though a number still preferred the staple bolivia type. The market was divided between the groups which preferred staples, and those who trusted in the plaids, stripes and mottled effects to catch the eye of consumers as something new. The chief difficulty in selling the fancy goods lay in persuading the buyer to anticipate his needs, and few of the early orders were for any more then simply a sample piece of each of the styles.

Pressure to do more business in the worsted end of the market brought extensive development of very sheer fabrics such as wool voiles, wool taffetas, challis and very fine light weight twills. These goods were introduced with special emphasis on their mid-summer use, but many merchants saw in them a means for meeting competition with silk on its own ground. Women have grown to favor light, filmy dresses, and worsted mills appear to be following a progressive trend in making their fabrics conform to the characteristics of goods which have already proved their salability. Many of the light weight lines also partake of the colorful characteristics of the popular silk and cotton goods.

The Garment Strike

One of the reasons why buyers had been hesitating and uncertain through the spring, was disclosed when the garment workers of New York went out on strike early in July. For several weeks the local shops were closed and the strikers claimed that they had obtained cooperation from garment operatives in New Jersey and other nearby points to prevent the farming out of the work which could not be done in New York. It was notable, however, that most garment houses continued to take deliveries of goods under order and even before the end of July some cutters had developed mysterious means for getting the work done on which they were committed. Settlements were made here and there so that by the middle of the fall houses were operating again on a fair basis.

During September a number of important openings for the spring 1927 season were made and the diversity of fabrics, colors and patterns which were offered by the mills which had hitherto been essentially staple mills was little short of amazing. On repeat numbers the average decline from the year before was said to be about 10%, though ranging as high as 17½% on narrow goods in certain houses. A fair interest in quick delivery goods helped to clean up accumulations in some quarters and as the fall progressed sentiment in the women's wear market took on a more hopeful aspect. Despite the great vogue of fancy coatings there was keen last minute demand for those of the bolivia type and a number of the more popular fabrics achieved considerable premiums in the second hand market. By the close of November however the edge was off the market again and the trade lapsed back into the dullness which was characteristic of the summer.

Good Styling the Keynote

The immediate outlook now that the new year has gotten under way is a shade more hopeful but without definite promise. Buyers find that they can get what they want when they want it, and they therefore wait until the last minute before placing orders. The battle which has been in progress for several seasons to reestablish the worsted dress in fashion's fancy will be waged again this spring. Past lessons may prove helpful in effecting better results. Attractive styling and inherent good quality in the fabrics must in the end gain the worsted a higher degree of recognition for women's wear than has been accorded to it in the last few seasons. Undoubtedly a large coating business lies ahead both for spring and next fall, but since the fancy has become a leader, buyers are likely to delay until the last minute. A background of business in staples resulting from the continued popularity of the bolivia may prove a life saver to many mills, in a season when active manufacturers are whetting the appetite of buyers with extensive and beautiful lines of fancies.

British Wool Trade Optimistic

Coal Stoppage Causes Unfulfilled Hopes in 1926—Favorable Factors for 1927

From Our Bradford, Eng., Correspondent

THE year 1926, so far as one can see, would have been a fairly satisfactory one in the wool textile trade of the United Kingdom but for the coal stoppage. This unpredictable factor caused a lack of confidence as well as a reduction of turnover. Other favorable influences from a British point of view—such as the stabilization of the franc and an improvement in China—were unexpectedly belated in their development; but there is little doubt that without such a widespread industrial dispute there would have been a perceptibly larger consumption of wool, and a slightly higher price-level. Even as events turned out, stocks of wool in Europe towards the end of the year were so light that spot raw material in the London market commanded a 5% premium over corresponding qualities in Australia.

The first four months of 1926 passed off smoothly and justified the optimistic expectations entertained at the end of the previous year. There was a steady and gradual improvement in trade, particularly in the worsted branch. Excellent orders were booked for repps, and unemployment both in worsted spinning and worsted weaving was reduced to a low ebb. The woolen section remained relatively depressed, but taking the industry as a whole, both woolen and worsted, the position was not unsatisfactory.

Unfortunately this progress was swept away by the general strike and the six months' coal stoppage. All sections of the trade lost confidence and reduced stocks and commitments to the lowest point. The home demand for cloth and clothing in the coal-mining areas was severely curtailed, and there was a similar curtailment in most other centers, particularly in the iron and steel districts. Last, but not least, heavy losses well exceeding a million pounds sterling were incurred in enforced purchases of dear foreign coal, and no compensation for these losses could be obtained from the consumer.

On the whole, it is surprising that an unheaval of such magnitude did not affect the industry more than was actually the case. It is estimated that in the woolen and worsted industry the average reduction in turnover and

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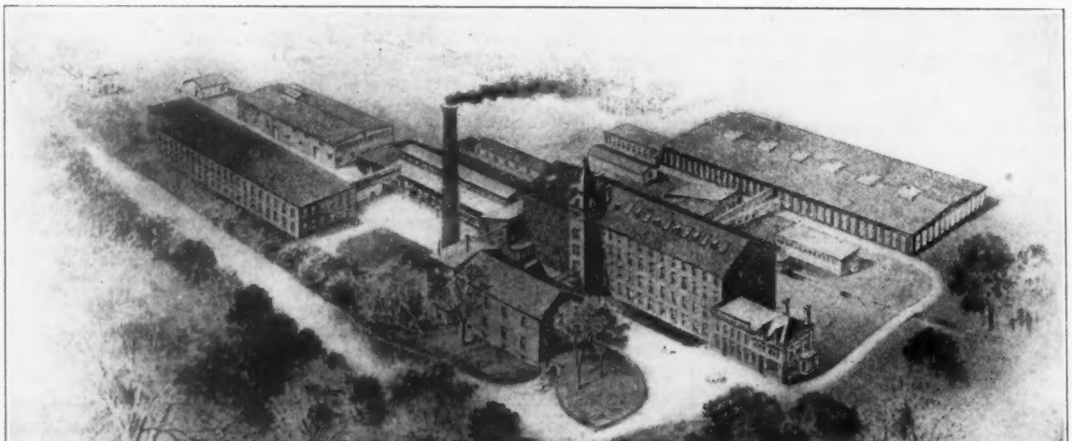

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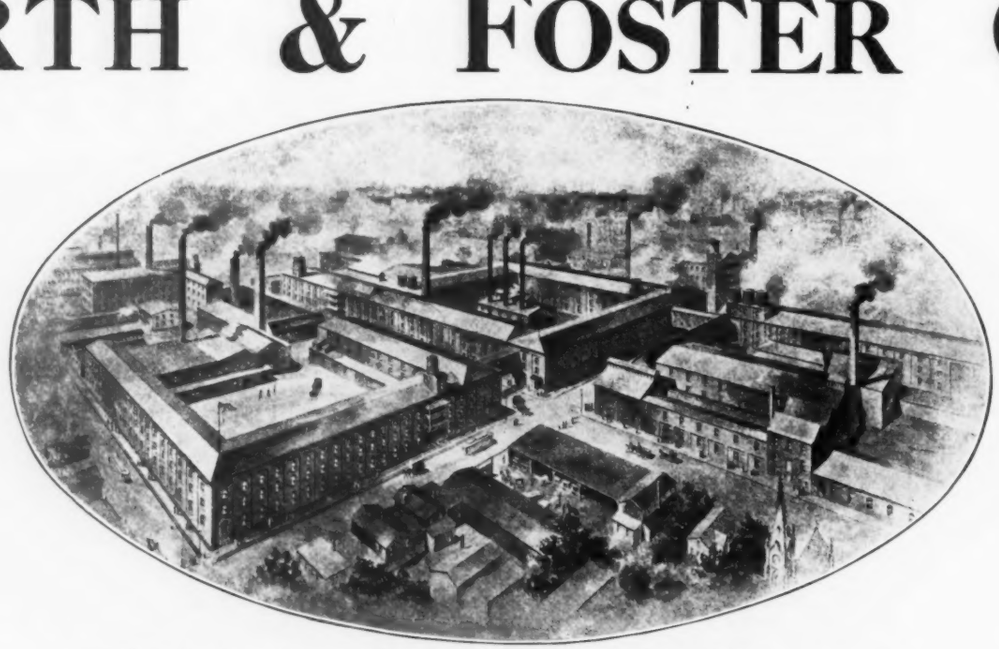

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output during the six months' coal stoppage was about 10%. The different sections were affected to a varying extent; the preliminary branches, for instance, suffered most, owing to the using-up of piece goods, yarns, and tops from stock. Nevertheless, even in combing and carding it is estimated that a larger quantity of wool was worked up than in 1925, when consumption was affected by the slump in prices and also by the wool textile strike.

So far as the course of business in tops and yarns is concerned, medium and coarse crossbreds were neglected during the first half of the year, owing to the inability of Germany to buy her usual quota of crossbred tops and yarns. Values consequently tended to sag, though merinos held their ground fairly well. In August there was a reaction which affected all qualities. France bought heavily in the primary markets; Germany showed a sharp improvement in the worsted branch and bought tops and yarns from Bradford more freely; while the home trade, after a period of living on stocks, recovered a little. There was a spurt of business and a rise in values. Then followed the appreciation of the franc, which put French buyers in difficulties, and enabled Bradford to force a lower level in Australia, ultimately bringing wool on the average to the lowest point since 1923. On this basis Bradford bought extensively, and regarded her purchases as a good investment.

Machinery Activity

There are no returns of machinery activity in this country, but judging from various indications it would appear that on the year there was a slightly larger turnover than in the bad year of 1925, but much less than a normal year. The ups and downs of activity are shown best by the following record of the percentages of unemployment among insured workers at the end of the months shown:

PERCENTAGES OF UNEMPLOYMENT

End of:	Woolen and Worsted	Hosiery	Carpet
	Percent	Percent	Percent
May, 1924	4.7	5.0	5.0
June, 1925	19.7	9.4	10.6
April, 1926	9.7	6.2	14.4
May-June, 1926...	24.9	18.7	19.7
Nov., 1926	14.2	7.7	11.0

It should be added that these percentages now include workers on systematic short-time (who may be working three days each week, or alternate weeks); and as there was a universal spreading-out of work in 1926 figures rather exaggerate the depression.

Wool Consumption

The quantity of virgin wool (excluding wool from sheepskins) retained in the United Kingdom during 1926 is shown below in comparison with 1925 and 1913:

In mill lb.	1926	1925	1913
Foreign and Colonial wool:			
Imports	834	727	801
Re-exports	340	339	307
Retained	494	388	494
British wool	61	56	95
Total retained	555	444	589

On the average during the last five years the retention has been 575,000,000 lb. Stocks at the end of 1925 were excessively low, and it is probable that the actual consumption of wool during 1926 has been in the neighborhood of 510,000,000 lb., against 460,000,000 lb. or a little more in 1925. (The figures given above for 1926 are for the twelve months ending November.)

The quantity of pulled wool (rags, shoddy, etc.) used in this country before the war represented another 200,000,000 lb., but it is now estimated that only about one-third of this amount is consumed.

The Export Trade

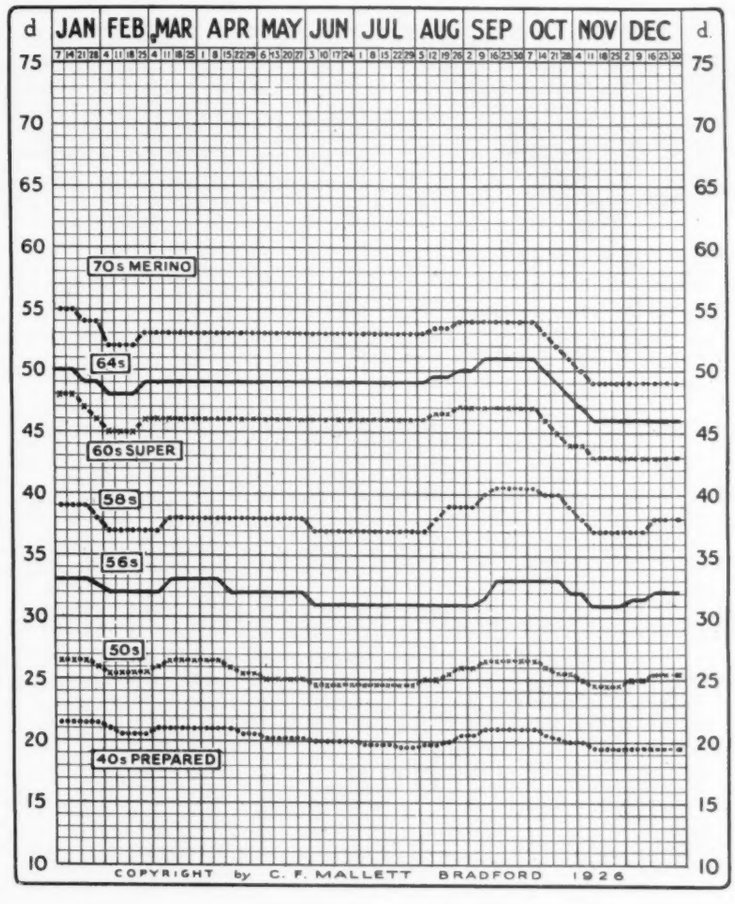
The export trade (which accounts for half the total production of the industry) was rather worse than in 1925, though the decline was nothing like so great as it was in 1925 in comparison with 1924. Indeed, in the closing months exports of semi-manufactures improved appreciably, and there were also signs of a turn in fully-manufactured goods.

Exports of tops were a little higher than in 1925, but exports of worsted yarns were down (mainly owing to Germany). Exports of worsted tissues showed a comparatively slight fall, woolen tissues a rather larger fall. China took rather more piece goods than in 1925 (due to heavier shipments in the early months), Japan rather less. Canada was the mainstay of the export market, excellent quantities being sent to that market. The European destinations were poor. The United States took less worsteds, but more woolens.

The following statement shows the principal features of the export trade, the figures for 1926 being for the twelve months ending November:—

Exports of:	1913	1925	1926
Tops (mill. lb.):			
Total	43½	32	34½
Germany	16¼	10	6
Worsted yarns (mill. lb.)			
Total	50	39	32
Germany	29½	20	12
Worsted tissues (mill. sq.yds.)			
Total	81	47	45
Far East	10	9	7
Woollen tissues (mill. sq.yds.)			
Total	154	132	121
Far East	21	29	25

In 1924 exports of tissues to the Far East reached 15,000,000 sq. yds.



Average Prices of Tops at Bradford, England, During 1926

The Piece Goods Trade

Prior to the coal stoppage there was good trade in repps and dress goods, in tweeds, and in worsteds generally; while woolens remained depressed, owing partly to lack of Far Eastern trade. The coal stoppage checked development in all sections; but it hit the hardest the trade in the cheaper classes of woolens which cater for working-class trade. Tweeds remained in good demand throughout; indeed, the Scotch mills were unable to cope with orders, overtime being worked, and weavers being imported from Yorkshire and from the jute industry in order to relieve the shortage of labor. Medium worsteds were in steady demand, as they catered both for quality and cheapness. Fine worsteds began to move more freely when the stoppage was ended, and it became apparent that worsteds were favored more than woolens. The latter, however, picked up a little as a result of improved purchasing power in the industrial districts. The dress goods trade opened well, but was then sorely tried by cheap importations from France, owing to the depreciated franc. Later in the year, the reverse movement led to cancellations of French orders, and Bradford manufacturers reaped the benefit. Poplins, repps, and charmelaines were the fashionable lines. Taking piece goods generally, the trend continues to be towards the most novel fancy designs, though in the case of men's wear this trend is checked by and blended with the more sober ideas associated with men's clothing. The Scotch designers have exploited the popular vogue with great skill, and they have commanded the best of the market both at home and abroad. Huddersfield fine worsteds of the exclusive type have come late into favor toward the end of the year.

The Price Position

During 1926 wool prices were exceptionally stable. The percentage variation was the smallest of any year since the war; it was, indeed, smaller than was normally the case before the war. This allowed small scope for speculative profits, particularly as the trend on the whole was slightly downward. The following table shows the prices realized in London for combing fleece wool, first cost, clean, London, without oil, according to Kreglinger & Fernau's figures:—

Per, lb.	July 1914	Dec. 1924	Dec. 1925	Dec. 1926
	d.	d.	d.	d.
70s super.....	32	85	61	49
64/67s good med.	30½	77	50	44
60/64s good med.	30	71	45	40
56s fine crossbred	26	57	30	29
46s crossbred...	17	35	20	19
36/40s crossbred	15½	30	17	17

Merinos show the largest drop compared with a year ago.

In Bradford tops the position is as follows:—

Per, lb.	July 1914	Dec. 1924	Dec. 1925	Dec. 1926
	d.	d.	d.	d.
64s merino.....	32½	81	50	46
58s crossbred...	26¾	66	39	38
56s crossbred...	24¼	55	33	32
50s crossbred...	20¾	45	27	25½
40s prepared...	16	34	22	19½

The following table shows a few prices of representative qualities of yarns:—

	July 1914	Dec. 1924	Shillings & pence per lb. Dec. 1925	Dec. 1926
	s.d	s.d.	s.d.	s.d.
2/48s Botany (64s)	3/3	7/10½	5/8	5/4½
2/40s (56s)..	2/10½	5/7½	3/11	3/10
2/32s worsted med.	1/10	4/–	2/11	2/9
2/16s worsted med.	1/8	3/3	2/3½	2/2½

Spinning margins were generally unsatisfactory throughout the year.

Outlook for 1927

From a price point of view, it is reckoned that wool is now a cheap commodity. According to the "Weekly Wool Chart" index number, merino wool in December stood at 139, crossbred wool at 114, and wool as a whole at 126; July, 1914, being the base. The average level of wholesale com-

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modity prices in this country is rather above 150, and it is clear that wool particularly crossbred wool) is rather undervalued in relation to world-prices of other raw materials. Despite the troubles of the last year, the whole of the current clip was absorbed, together with a substantial carry-forward from the previous season; and though stocks of wool at the consuming centers were a little heavier than a year ago, they were still undeniably light. A moderate world-demand for wool appears to be amply sufficient to lift the current production of wool, and consequently there seems to be no danger of an accumulation at such modest prices. On the other hand, so bitter has been the experience of high prices in recent years that a most determined resistance will be offered to any appreciable rise. The best judges in Bradford look forward to minor fluctuations, with a tendency towards appreciation, particularly in crossbreds.

A stable price-level is the first requisite towards good trade. The coal stoppage of 1926 had such disastrous effects that a dispute on a similar magnitude in 1927 seems quite out of the question. The home demand, therefore, should show some improvement by comparison. On the export side, the Japanese market is picking up slowly, and in other quarters there seem to be signs of a slight recovery. The turnover both on home and export account, therefore, is expected to be rather larger than in 1926; and in particular, as France and Italy are losing the unfair advantage of depreciated currencies, a larger share of the business in dress goods and cheap cloths should be enjoyed by British manufacturers. The general position appears to be a healthy one. Resources are so straitened that there is no possibility of harmful speculation. A spirit of caution animates all sections, and indeed the demand in any quarter is not likely to be such as to enable very profitable margins to be secured. Nevertheless, there is restrained optimism with regard to the future, and a gradual improvement towards more normal conditions is expected.

Good Outlook for Carpets and Rugs

Despite Unsatisfactory Volume for Year as a Whole, Situation Decidedly Better Than Year Ago

ALTHOUGH the last year was an unsatisfactory one for carpet and rug manufacturers in regard to volume of business transacted, a majority state it was a period representing a slight improvement over the year 1925, with best business of the last year being apparent during the last six months. This situation has been a factor in causing a certain amount of conservative optimism in regard to prospects for 1927. For example, it will be recalled that the fall auctions resulted in the sale of a larger quantity of rugs and carpets than the trade had believed could be moved in so short a time under conditions current during the early portion of 1926 and this developed a more optimistic feeling in the entire trade, which still prevails.

The first three months of 1926 were fair in respect to amount of business booked by manufacturers of woolen faced goods. This period of fair trading was interrupted by the holding of the spring auctions which resulted in lower prices than had prevailed during the earlier months. This had the effect of causing a decline in interest, buyers refusing to anticipate their needs in view of the softness apparent in the market and confining orders placed with manufacturers to as small quantities as possible—an unfavorable situation for manufacturers to face. This condition continued until September when the fall auctions were held at which higher prices were paid, resulting in an advance of 4% to 8% on all wool lines. This had a stabilizing effect and caused more confidence throughout the trade.

Higher carpet and rug prices at this time were undoubtedly brought about by an advance in the raw material market, wools experiencing the most radical advances of the year in which the confused situation in China, a prominent supply ordinarily for American carpet manufacturers, played no small part. A number of manufacturers declared prices on Oct. 1 to hold until Dec. 1, the date of the opening of one of the largest manufacturers. Prices at the opening were practically the same as in October and comparatively little business was written in December principally because of the refusal of retailers and jobbers to increase inventories.

Narrow Goods Quiet

Axminsters were in poor demand throughout the entire year; especially was this the case in narrow goods and seamed rugs. In this connection it is interesting to note that more mills realizing this condition have decided to install wide looms and many manufacturers have already made this change to meet the new conditions of the market. Low wiltons were in fair demand at times during the year but quiet for longer periods. Worsted faced goods were in poor demand throughout the entire year.

Wool prices during the year fluctuated comparatively little with the exception of the fall rise, the most drastic of the year, taking place in October and November. Higher prices for wool during the year were on a basis of 50c to 52c per lb. scoured basis, while the lowest point reached was between 42c and 45c. Primary carpet wool markets are now 5% to 8% higher than six weeks ago which again may prove to be an important factor in accelerating buying of carpets and rugs by jobbers and retailers, to cover their spring requirements before this latest advance in the raw material is transmitted to the finished goods.

Spring business was interrupted by the results of the Smith auction early in April when, although the usual support on the part of small dealers and retailers was the feature, prices paid represented a decline of about 12% from that of Nov. 1, 1925. While this was regarded by a majority of manufacturers as not representing more than a normal decline in view of the general condition of the market at that time and especially for a sale of goods for immediate shipment, it was, however, noticeable that buying thereafter by jobbers and retailers was more conservative than had been apparent during the earlier months of the year. At this auction medium sized rugs developed the best interest from buyers, smallest sizes being in poor demand. While axminsters were generally in poor request throughout the year a fair interest was displayed in several of these lines at this auction.

Auctions Held

Price ranges on several Smith lines at this April auction were as follows:

Grade	High.	Low.
12-4 Carlton Axminster.	$27 00	$24 25
11-4 Carlton Axminster.	23 75	22 50
10-4 Carlton Axminster.	18 00	16 75
8-4 Carlton Axminster.	15 00	14 00
6-4 Carlton Axminster.	8 25	7 50
E Carlton Axminster.	2 15	1 95
J Carlton Axminster.	3 10	2 85
12-4 Ardsley Axminster.	21 75	20 50
11-4 Ardsley Axminster.	19 25	18 00
10-4 Ardsley Axminster.	16 00	14 50
8-4 Ardsley Axminster.	12 25	11 50
6-4 Ardsley Axminster.	7 00	6 25
E Ardsley Axminster.	1 75	1 60
J Ardsley Axminster.	2 70	2 40
12-4 Katonah Velvet...	14 50	14 50
10-4 Katonah Velvet...	10 75	9 85
E Katonah Velvet....	1 35	1 20
12-4 Palisade Velvet*...	22 00	20 25
11-4 Palisade Velvet*...	19 00	17 75
10-4 Palisade Velvet*...	14 50	13 50
8-4 Palisade Velvet*...	11 50	10 75
E Palisade Velvet*...	1 70	1 60
J Palisade Velvet*...	2 90	2 80
12-4 Yonkers Axminster.	33 75	31 25
10-4 Yonkers Axminster.	23 00	22 25
8-4 Yonkers Axminster.	19 00	17 75

The above prices may be compared with the following prices which were paid early in the week at the auctions held by the same company early in October:

OCTOBER 1 SESSION

	High	Low
12/4 Carlton Axminster....	$30 50	$25 25
11/4 Carlton Axminster....	22 75	21 25
10/4 Carlton Axminster....	18 00	16 75
8/4 Carlton Axminster....	14 50	14 00
12/4 Palisade Vel. Fr'd...	22 75	21 25
11/4 Palisade Vel. Fr'd...	18 75	17 75
8/4 Palisade Vel. Fr'd...	11 75	11 00
12/4 Ardsley Axminster....	22 50	21 50
10/4 Ardsley Axminster....	14 75	13 50
6/4 Ardsley Axminster....	6 75	6 25

OCTOBER 2 SESSION

	High	Low
12/4 Katonah Velvet.....	$15 00	$14 25
10/4 Katonah Velvet.....	10 50	9 75
12/4 Manor Tapestry.....	14 50	14 00
10/4 Manor Tapestry.....	9 75	8 75
12/4 Yonkers Axminster...	33 50	32 00
10/4 Yonkers Axminster...	22 00	20 75
6/4 Yonkers Axminster...	9 50	9 00
12/4 Potomac Axminster...	33 50	30 75
10/4 Potomac Axminster...	22 25	20 50
8/4 Potomac Axminster...	18 50	16 75
12/4 Colonial Velvet Fgd..	27 75	22 50
10/4 Colonial Velvet Fgd..	17 75	16 00
6/4 Colonial Velvet Fgd..	8 25	7 50

As the above prices indicate, advances were secured, averaging from 4% to 8% on most lines with axminsters displaying more strength than had been anticipated. The Smith company moved a record volume of merchandise at the fall sales and there was an exceptionally brisk demand in which the carpet wool situation played an important part in the minds of buyers. On Tuesday of the week of the sale more than $1,000,000 of floor coverings was sold, 17,840 bales being moved, grand total for the entire sale being above the $6,000,000 mark.

The auction showed not only a better support from retailers but large buyers purchased more actively than had been expected, taking five and ten bale lots when the slightest concessions under smaller lot prices were procurable. Velvets attracted many buyers and axminsters were aided by the higher prices named on these lines by other manufacturers at that time.

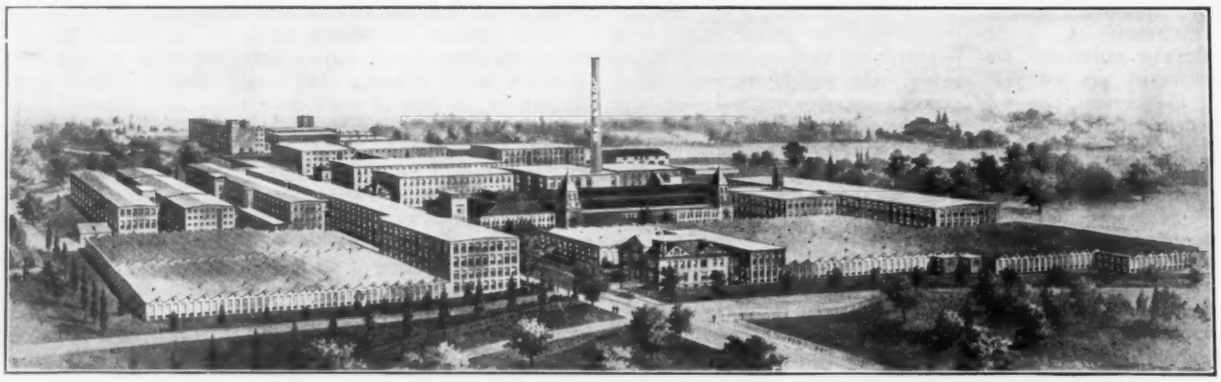
Strong Wool Prices

To reach the underlying causes for this spurt in demand which resulted in a radical change of opinion in the trade and on the part of buyers, it is necessary to go back to the raw material markets, as stocks all along the line from wool and yarns to finished goods in manufacturers' and retailers' hands had by this time of the year reached small proportions and strength was therefore felt in the finished goods more quickly than if manufacturers had had large stocks to liquidate.

Lack of large supplies of carpet wools and especially normal supplies of China wools was given as one of the primary reasons for bringing about this sudden change in the market for finished goods. Normally American carpet and rug manufacturers consumed approximately half of the wools coming out of China. During the last year, when internal conditions in China have become more acute, exports of these wools reached small proportions, so small as to bring about a situation that was called critical by many manufacturers. As an example of this, statistics show that receipts from the interior at shipping ports were only half in 1925-1926 of the quantity received at the same ports from the interior during the year previous. This cut in half of supplies, of which the great proportion went to American carpet manufacturers. At times during the latter months of the year dealers had practically no China wool to offer.

The situation in regard to China wools became easier for a short time in November when shipments were received at Chinese ports and quickly sent to this country. There was not, however, a sufficient quantity to materially change the situation in this country and as this freer movement in China wools did not continue, conditions in United States were back again where they had been.

It is difficult to gauge this factor accurately as several wool dealers believe larger quantities will soon find their way to this country to take advantage of higher prices procurable. Others feel conditions in China are becoming such as to make it an impossibility to secure any large amount of wool from this country, pointing to the fact that warfare between the various factions is becoming more severe instead of becoming better and for this reason they predict a continued firmness in all carpet wools until it is possible to ship wools freely from interior points.



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IT IS possible for the unbiased observer to state not only that the outlook for the worsted yarn trade is more promising for this year than last but also to report for the first time in several years that business actually placed during 1926 represented a distinct improvement over the previous year. A majority of spinners, practically all in fact, predict a better year in 1927 than was experienced last year, many stating the outlook is better than it has been for five years. In other words, while other industries may have reached high points in 1925 and 1926, it is probable that the worsted spinning trade is still on the upgrade with the volume of business and financial returns are concerned, although the latter is more in doubt than the former.

A larger volume of men's wear business, which was normal in point of poundage in 1926, is expected and a better year so far as outerwear purchases of yarn are concerned is indicated.

Dress Goods Yarns Improve

When the dress goods situation is examined with regard to the outlook for yarns to be used, a more confusing condition is found and there is a wider difference of opinion as to what the present year will bring forth. While the volume of dress goods yarns sold in 1926 was estimated to be approximately twice that of the previous year, the total amount of these yarns taken by manufacturers in this trade was so far under that of five years ago when ladies' worsted dress goods fabrics were more widely used, that no comparison can be made. Therefore, while distinct improvement in these yarns has been seen and the outlook is still more promising, this does not mean manufacturers expect a volume of business as large as they did years ago before the present popularity of silks and other materials became so noticeable.

With a better year predicted upon the basis of a larger consumption there are also good grounds for looking forward with optimism when we examine other basic factors entering into such a question. Stocks of yarns in both manufacturers' and spinners' hands are smaller by a considerable margin than a year ago according to statistics which represent approximately 80% of the spindles. It may also be stated that the spinning trade has been helped by the severe liquidation witnessed during the last year, and is now in a better position to secure immediate benefit from any improvement in demand from their customers than at any time since unsatisfactory conditions first started.

Advertising Worsteds

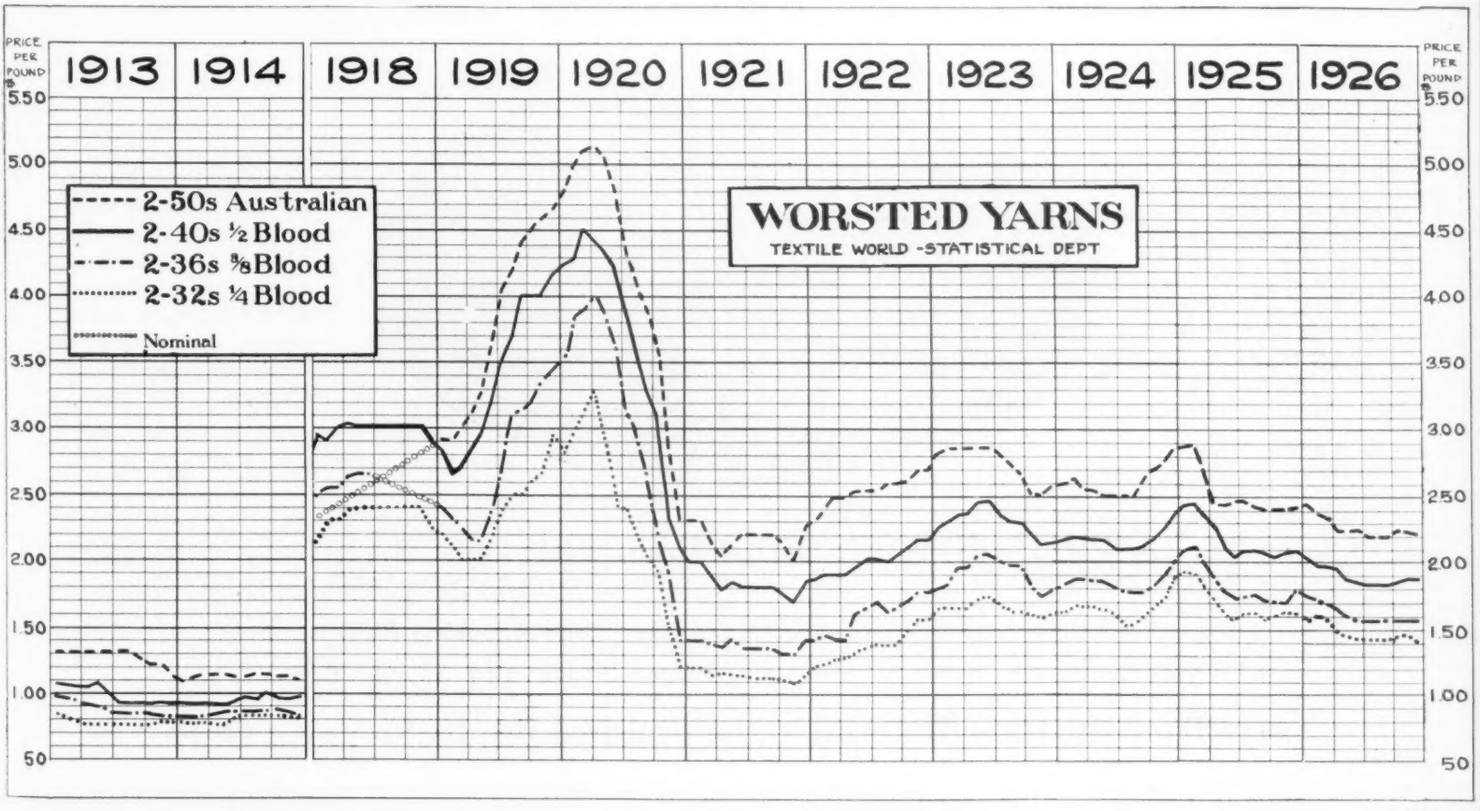
The leading manufacturers of dress goods in this country are making a strong campaign to restore worsted dress goods to their former position which has been seriously curtailed by the large demand in recent years for silk and other lighter-weight fabrics. These mills are now turning out attractively styled fabrics of lighter weight than ever before made in this country and several manufacturers have already attained a fair degree of success in their new lines of this character. Manufacturers are also taking steps to popularize these new lines by means of style shows and other new methods of publicity, all of which indicate that these manufacturers are now attacking their problems in a more systematic manner than at any time since their market was curtailed.

This is particularly encouraging when it is remembered that a year ago many in this trade were dubious that worsted dress goods would survive the inroads that had been made up until that time by silk and other lighter-weight fabrics. They felt this field as far as worsteds were concerned had been permanently lost and probably would not return. Developments during the last twelve months have changed this viewpoint and have indicated the error in this prediction. Such distinct improvement has occurred during this time there is a good basis for them forecasting further improvement during the present year. In this connection one of the largest mills making this type fabric states they are turning out a line of these fabrics weighing less than five ounces to the linear yard, being all worsted goods.

Finer Yarns Demanded

It may be readily seen that any decided trend in this direction would aid the manufacturer and spinner materially. Lighter-weight fabrics require finer yarns, and production of finer yarns means a smaller volume of yarn that spinners will be able to turn out. This would be of especial benefit to them in view of the wide-spread conviction that there are too many spindles in the country for our present requirements.

Men's wear yarn business has been of fair volume, taking the year as a whole, with periods of exceptional activity being counter-balanced by others of extreme dullness. Manufacturers have not been buying large quantities far in advance of their requirements, following the buying policy that has been adopted by their own customers; but while spinners have not at any time had a large volume of advance orders on their books, what is called a normal volume of men's wear yarn business has been done. This, however, has not resulted in as material benefit to these manu-



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facturers as might be expected because of the large number of dress goods concerns that turned their machines over to production of men's wear when demand for dress goods declined.

Men's wear mills in the vicinity of Philadelphia have been using comparatively small quantities of yarn in the gray during most of the year demand being for vigoreaux and mixtures to go into fancy lines, piece dyes having been in little request. This is one result of the trend away from staple fabrics which has been witnessed during recent years and toward fabrics possessing most advanced style characteristics. In fact several of these manufacturers are beginning to wonder whether this trend to wide variation in fabrics produced has not been carried far enough as they are now receiving such relatively small individual orders at a time for such a wide line of different fabrics that they assert this is making volume production an impossibility. This has been a factor in preventing them from following the lead taken by other industries of producing large quantities of a standardized product at a low volume price.

Heavier Men's Wear

The present heavy-weight men's wear fabrics are particularly interesting because of the new tendency back to heavier fabrics, many of them weighing 15 ounces. This is in contrast to the previous trend in these lines which for several seasons was toward fabrics that were of nearly the same weights for both seasons. The previous heavy-weight season witnessed a definite trend in this direction. Manufacturers have been sampling and placing orders for 2-30s and 2-32s half blood mixtures and vigoreaux for these fabrics. This feature is looked upon as a desirable one from the standpoint of the manufacturer and also of the spinner as it will no doubt mean that a larger volume of men's wear lines will be used than when the two seasons' fabrics were more nearly of the same weight and summer suits could be just as well worn in the cold weather. With more of a distinction between them this will no longer be so general. The prospect for men's wear yarns is, therefore, a hopeful one from this standpoint although there is yet considerable doubt as to whether spinners will be able to obtain a satisfactory margin as has been the case during the last year.

Outerwear Sales Larger

Outerwear yarns are in a favorable situation for a year of normal business with indications that the volume will represent an increase over 1926, the latter half of which was a good one from this standpoint. In fact the largest spinners of these yarns are looking ahead with considerable confidence that this will be the best year they have experienced for more than five years. A number of reasons are advanced for this conviction. These yarns, in the first place, are selling at prices approximately 20c under those of a year ago which is an added incentive for manufacturers to have confidence when buying, and in addition lower raw material costs usually indicate an increase in the volume of business booked. This also may indicate the possibility of manufacturers buying these yarns farther ahead than has been true during the last year.

In the next place, outerwear yarns are on a more healthy basis in regard to stocks held by both manufacturers and spinners, this section of the yarn market being further liquidated during the year as manufacturers refused to buy ahead in advance of their goods requirements with the exception of once or twice. One such exception was noted at the turn of the year when large orders, several being for more than a quarter of a million pounds, were placed for the fall business. Spinners also refused to stock yarns and as a rule spun for orders only. This rule was broken only at the last of the year, several spinners running mills full time during the month of December although the usual year-end lack of demand from manufacturers was in evidence.

Spinners believed this slackening would be offset by a larger inquiry shortly after the first of the year, largely because of the fact that manufacturers were without stocks of yarn that had been carried over this period. Another factor seeming to justify this policy of spinners was the favorable outlook for outerwear garments during the current year, there being several phases of the situation giving a degree of credence to this viewpoint.

Shaker Sweaters Return

One of the most important reasons for this feeling is the return to favor of shaker sweaters that had been adversely affected by the popularity of windbreakers made from materials other than knit goods.

During the last year, many sweater concerns turned their machines over to production of bathing-suits as demand for these garments was good last season while the demand for staple sweaters, during the early part of last year, was poor. This naturally benefits manufacturers who are able to turn their machinery this way but nevertheless is regarded by a majority in the trade as being a disturbing factor, as the entrance of a larger number of mills into either field results in such a large increase in production that even a healthy demand for either is quickly satisfied and is not sustained.

Competition Severe

This feature has been the principal reason for the fairly general complaint of manufacturers that competition in practically all lines of outerwear has been so severe during 1926 that while many mills enjoyed a good demand for their products the latter half of the year little profit has been possible due to the low prices that were quoted to obtain the business. The trend of manufacturers in one line to swing to the other at times made this competition even more severe. Although such a condition is not likely to disappear during the present year many feel manufacturers will benefit slightly more on business than in 1926 in view of the improvement that has already been reported in the sweater situation and the presumption that a good bathing-suit season will follow.

So far as spinners of outerwear yarns are concerned the unevenness of demand during the last seasons has been one of the most difficult problems they have been forced to meet. During this time commodity prices have been falling and mills have lost on practically all stocks carried either in yarns or in manufactured articles. Yet there was no other alternative worth considering. When manufacturers were buying yarn it was apparent the movement soon became general, all mills coming into the yarn market at the same time. When demand was less active all manufacturers seemed to stop buying at practically the same time. Spinners were forced to either run over-time or, if conditions were the reverse, to close their plants to prevent the accumulation of stocks.

Market More Stable

Spinners believe the present year will witness a more even demand with fewer peaks of extreme dullness and fewer but more sustained periods of healthy demand. In other words, both spinners and manufacturers can operate their plants more efficiently with a steady demand than is possible when there are peaks of extreme activity and others, following, of dullness. Both would benefit by any steps that are taken to bring such conditions about. Uniform production so far as possible is not only desirable in textiles as in other industries, and in no branch of it more so than in the manufacture of outerwear and spinning of yarns used, as is evident after an examination of conditions during the last twelve months.

Hosiery and Underwear

Hosiery and underwear yarns have been in an unsatisfactory condition during the last year so far as forward business with spinners has been concerned. A fair volume of yarn was taken by the latter group during the second half of 1926 but the bulk of this went to spinners of yarn on the cotton yarn system in preference to French qualities on the worsted system. The tendency of underwear manufacturers to turn to mule spun mixed yarns was one of the features of this section of the market during the year. Spinners of yarns on the worsted system have been unable to compete on a price basis with cotton yarn spinners and as manufacturers have, in most instances, decided to produce a competitively priced garment most of the yarn business placed during the year has gone to mule system spinners of cotton and wool mixed yarns.

In this connection it is apparent that cotton yarn spinners catering to this trade are going to make even more strenuous efforts to hold these gains permanently. They are now offering hosiery and underwear manufacturers yarns containing as much as 50% wool and the same quantity of cotton, which was impossible to secure a year ago when they were making only yarns containing smaller proportions of wool. Spinners of these yarns on a cotton yarn system formerly catered to the demand for 10% or 15% wool, leaving higher wool percentage to French spun merino concerns.

Room for Both Yarns

It should be emphasized, however, that at the end of the year and at present there are indications that worsted spinners have been reducing costs and are competing more closely than at any time during the last year. This swing toward lower priced mule spun mixtures has been a price trend, there still being a considerable difference between the two. As a majority of underwear manufacturers have been compelled to merchandise their goods on a price basis, they have used the mule spun yarn in preference to French spun merino.

However, many do not believe that this trend will continue as marked as last year. One of the most important reasons for this prediction is the presumption that this situation will clarify itself to a greater degree this year with the possibility of two distinct fields becoming apparent, one catering to a lower priced garment containing, in most cases, a lower wool content, although this will not always hold true. Spinners of French merino yarns will make a more concerted drive to secure business from manufacturers who specialize in higher priced garments and probably containing a larger proportion of wool than the others. In other words, worsted spinners do not feel they have lost their entire market to cotton yarn spinners of this group but rather that conditions during the last few seasons have been such as to give them certain disadvantages, which will be less effective this year, to overcome. They believe the trend to development of two distinct fields will be more noticeable this year. This will give them an opportunity of securing a larger share of this business than they obtained in 1925 or in the last year.

Hosiery Volume Small

Hosiery manufacturers, so far as their worsted lines have been concerned, have had a sub-normal year in regard to volume, although a distinct improvement was noted during the latter months of the year. Manufacturers of these lines experienced losses during recent years by holding too large stocks of finished goods which jobbers and retailers ordered in exceptionally small amounts at a time, compelling the manufacturer to take losses that everyone was compelled to take as wool prices declined. These manufacturers, having learned this expensive lesson, have taken it to heart the last year, to such a degree that they went to the other extreme, losing business late in the year because they had been entirely cleaned out of this merchandise.

Fall weather in October and November of last year, which was cold in many sections of the country, aided worsted goods and yarns to an important extent, far more than was generally recognized in the trade at the

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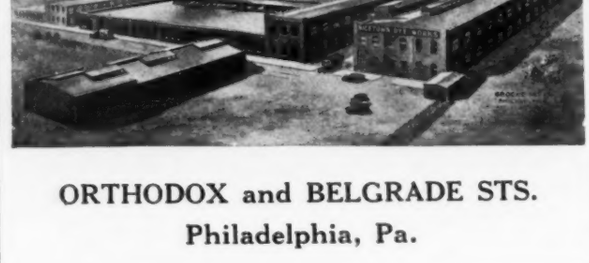

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time. It was one of the most important factors in placing the yarn market in a liquid condition and one of the reasons that so many spinners at the beginning of the present year were willing to forecast the future with so much confidence. This was in marked contrast with their pessimistic outlook at the end of the previous years. Spinners as a general rule were willing to admit at the beginning of the present year that they would book a good volume of business during the first six months of the year although it was more difficult to locate one to predict a fair profit on this expected business.

Cold Weather Helps

In years when cold weather did not come until well into the new year there was a general inclination on the part of the public to feel that there would be little advantage to buy winter goods heavily in view of the fact that they considered it would only be a short time until they changed to lighter-weights as spring weather approached. When such conditions are experienced demand for winter clothing has been relatively smaller, people buying, in most instances, only where necessary and postponing purchases of winter lines for another season.

The last fall was a favorable one for the manufacturer and for the spinner from this point of view and retailers' stocks were so well cleaned up that a large volume of duplicate orders for winter lines was received late in the season by manufacturers and by spinners. This was particularly true in sweaters, yarn buying for these lines being reported by spinners later in the season than is usual. In worsted hosiery lines an even more extreme situation was found at the close of last year. At that time jobbers and retailers were pressing these mills for quick shipments and offering to take all the manufacturer had in stock irrespective of what the patterns were. This condition was reported by several manufacturers in Pennsylvania. As hosiery mills had not carried large stocks, they were not able to make large deliveries but rather were compelled to manufacture the additional lines wanted.

As a result of such a situation it would be natural to expect that manufacturers of worsted hosiery in this position would experience a good demand for their lines next season due to the scarcity of many lines at the close of the present winter hosiery buying season. Many are predicting demand for worsted hosiery yarns will start to improve within the next month or two as manufacturers will have more confidence to operate further ahead than last year and this is expected to become more active as the year passes, largest demand being predicted for the latter half of the year.

Spinners Merge

One of the most important developments of the year in the outer-wear section of the market was the merging of two fair-sized spinning concerns with S. B. & B. W. Fleisher, Inc., of Philadelphia, making the combined concern one of the largest spinning plants for sales yarn in the country. This is an example of a trend that many in the trade believe will become more marked, as it is stated the above merger and others of a similar nature, have resulted in a saving of overhead costs and selling expenses.

The latter half of 1926 furnished an example of this fact when a large volume of outerwear yarn business was received by spinners, permitting these mills to run full time and as near full capacity as they were able to secure skilled help. Although these spinners booked a large volume of new business during this period it was particularly noticeable that they were unable to raise prices to any extent. When improvement in demand first started in July and August, the most important orders received in 2-20s quarter blood were taken at $1.20 and $1.22½ and while higher figures were quoted during the fall months there was comparatively little business placed above the $1.25 level. At the end of the year orders were being taken by most spinners at $1.22½ and $1.25 or approximately the same figures as were noted in sales six months previous.

Quotations Steadier

Wools were fairly steady during this time and toward the latter part of the year increasing firmness became apparent, when spinners endeavored to raise quotations but found demand became less active as they did so. As a result a majority again took business at their old and lower prices. This condition continued until the end of the year. With this trend in their raw material coming at a time when a good demand developed from manufacturers for their yarns, it was especially noticeable that spinners of outerwear yarns failed to secure higher prices for their yarns. Prices did not advance because of the keen competition for large orders, spinners being willing to sell for cost or lower in order to keep their machinery running full time.

This condition is illustrated in the outerwear section. It has been more noticeable there although it is general throughout the entire market. The "going" price has been set by spinners themselves in many cases at a level where a majority of them assert it is impossible to do more than break even on the business taken. With a larger volume of business, many believed this would correct itself but such has not been the case. There is considerable doubt in the trade that the present year will witness any important change in this respect, although as has already been pointed out, the prediction that a good volume of business will be placed this year is generally held.

As a result of such a situation among spinners and in other branches of the woolen and worsted trade, the movement toward correcting such a condition along cooperative lines was undertaken. After considerable preliminary work, a large part of the industry agreed upon the formation of what has been called the Wool Council of America, which is composed of representatives from the leading woolen and worsted associations, who as a body are studying the entire situation from the various viewpoints in order to recommend corrective measures when their investigation has progressed this far.

Cooperation Still Needed

This movement was started when there was little demand for yarns of any character and there was widespread discouragement that interest from manufacturers would ever develop to such a degree as to permit spinners to run their plants full time. Shortly after this a gradual but steady improvement in demand for weaving and knitting yarns appeared and it was noted as demand for their products increased the interest of spinners and manufacturers in this cooperative movement subsided to a large extent. In fact at the last of the year many expressed the opinion that it would be impossible for leaders in the movement to interest a large proportion of the industry again until conditions became less favorable.

Formation of the Wool Council was regarded as a forward step on the part of the woolen and worsted industry and it will be deplored by many if this is not supported by the trade as it is generally recognized that such a body if properly administered could be of inestimable value to the entire group. With the improvement in demand for worsteds and the greater stabilization of prices noted during the last six months, with the support of a cooperative movement such as this, there are grounds for looking into the future with more confidence than for five years.

Better Business for Tops in 1927

After Two Years Decline a Stable Situation Appears—Gain in Worsted Manufacturing a Factor—Noil Outlook Uncertain

THE year 1926 which opened with much promise quickly ran into unfavorable conditions and for the greater part of the year there was continuous decline both in tops and noils with a slight rally in tops at the opening of 1927. The general decline in values was not so extreme during 1926 as in 1925 but the two years combined forced the top market into a position most unfavorable to normal business at fair profits and in company with wool merchants and spinners wool combers experienced a very harassing and distressing year. Fine wool prices at the opening of 1927 were 32% lower than in January 1925; fine tops were 32% lower and fine noils 36% lower. The following table gives prices on January 1 in years named:

	1925	1926	1927
Fine wool	$1.65	$1.30	$1.12
Fine tops	2.05	1.63	1.40
Fine noils	1.25	.95	.80

Top imports for 1926 were negligible, less than 100,000 lbs. of wool, hair and mohair. The Bradford market was very weak at one period of the year but came back rapidly and is now on a firm basis though not quite high enough as related to wool values. The finer qualities of Bradford top showed a larger relative decline at the close of the year than the crossbreds as the following table indicates:

	Jan. 1, 1926	Jan. 1, 1927	Decline
70s	55 d	49 d	11%
64s	50 d	46 d	8%
60s	48 d	43 d	10%
58s	39 d	38 d	3%
56s	33 d	32 d	3%
50s	27 d	25½ d	5%

Topmaking Unprofitable

The difficulty in the American top market during the year was not so much lack of volume as unprofitable operation. Topmakers had a very narrow price field in which to operate. Worsted spinners exerted continuous bearish pressure and at no time during the year were wools low enough as a general proposition to enable topmakers to meet successfully the low bids made by spinning interests. Between relatively high wools and relatively low yarns the topmaker had very little room to turn around. Judging by the activity of wool combs which in November were 88% active as compared with 90% in November, 1925, the industry was maintaining itself quite well. In seven months of the year 1926 wool comb activity was larger than in the corresponding months of the previous year.

Noil Imports Decline

The noil market had a slow year featured by increase in production of noils from the worsted branch and decline in consumption from the woolen branch. Imports for the year fell behind 2,741,000 lbs. Total arrivals for the last five years are shown:

1922	3,980,000 lbs.
1923	8,574,000 lbs.
1924	10,884,000 lbs.
1925	7,469,000 lbs.
1926	4,728,000 lbs.

Noil prices over the last five years have shown wide fluctuations and this is clearly perceivable even when quarterly average prices are compared. Between the low price of 1923 and the high price of 1925 there is a stretch of 50c per pound or more. As a general principle when noil stocks accumulate prices move downward. The course of noils in the domestic market for 1926 covered a steady decline which was not checked until September following which there was a slight strengthening in fine noils and a good rally in ¼ blood noils. The average price of fine noils in January 1926 was 93c; in September the price was 80c and for the last three months of the year 81c. Quarter blood noils had an average value in January, 1926, of 56c. The market stabilized on a low of 48c in September and for the last three months of the year the average value was 53c, the top market following a similar course. Fine tops fell from $1.60 in January to $1.35 in September and at the close of the year were $1.38. Quarter blood tops fell from $1.08 in January to 93c in September closing the year at 97c.

Boston and Bradford Compared

No boom is looked for in the noil market but good steady demand is

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confidently anticipated. Producers who have had to cut their top prices to cost in order to get business and are looking to their noil output selling at prices that will at least tend to offset their high overhead. Both in Boston and Bradford these commodities are in normal relation to wool values. Larger demand is already seen in the English market, the Continent buying more freely. America is interested in crossbred qualities but finding difficulty in securing suitable materials at sufficiently low prices now that the domestic price level is on a low basis. The following table compares noils of similar grades in the Bradford and Boston markets at opening of 1927, duty and other charges added to the foreign quotations:

	Bradford	Boston
Fine noils	.78	.78
½ blood	.70	.70
58s	.60	.63
56s	.58	.60
50s	.53	.53
44s	.48	.48

It is to be seen from the above quotations that the Bradford market is not much of an importing proposition.

From the general outlook a larger noil output is probable in 1927. The main question in this market is whether the woolen branch of manufacturing will get good business at the opening. If worsteds should retain and then increase their lead the inevitably larger output of noils would meet a declining demand following decreased activity in the woolen consuming branch. The market has at this time a slightly upward trend and yet it is not difficult for mill buyers to uncover all the materials they need at not far from their own price.

The decline in noils during 1926 has been slightly larger than the fall in wools and about equal to the downward movement made by wastes. As to specialty noils, outside mohair perhaps, they represent limited demands and the imported materials like cashmere and camel hair show very little change from a year ago. The main difference between the market at this time as compared with the market at the beginning of 1926 is that the worsted branch of manufacturing seems to have established itself quite firmly against the competition of woolens and if this continues, as it probably may, the output of noils in 1927 is likely to be relatively larger than the demand for noils during the period. The following table compares noil prices of standard types at this time with values registered a year ago:

	Jan., 1926	Jan., 1927
Fine noils	93–98c	78–80c
½ blood	90–92c	70–73c
⅝ blood 58s	85–88c	63–65c
¾ blood 50s	58–60c	53–55c
Crossbred 44s	48–50c	48–50c

The feature of the above table is that the crossbred 44s are same price as a year ago.

Top and Noil Inventory

Boston wool trade inventory as of January 5 showed noil stocks, foreign and domestic, to be slightly smaller in the aggregate than in previous years. There were fewer domestic noils and more foreign noils in bond. The situation is shown as follows:

	1926	1927
Domestic noils lbs.	1,069,000	828,000
Foreign in bond	261,000	483,000
Foreign out of bond	157,000	58,000
Totals	1,487,000	1,369,000

Stocks of unsold tops in Boston as of January 5 showed a marked decline of 1,439,000 pounds covering both domestic and foreign sorts. The following table gives the situation:

	1926	1927
Domestic tops lbs.	2,193,000	984,000
Foreign tops in bond	.....	74,000
Foreign out of bond	575,000	271,000
Totals	2,768,000	1,329,000

Top Business Expands

There was more business in wool tops in mid-January, 1927. All grades were in better demand at slightly higher prices. Large business was offered well below market quotations and at so low figures as to be unacceptable to topmakers who could only acquire wool in a very strong wool market. The finer grades of tops purchased and ordered for future delivery were for both French and Bradford spinning, the medium tops were in call from men's wear manufacturers and the lower grade tops from foreign wools were in call for men's wear and dress goods. Knitting interests developed additional activity, purchasing much more freely in high ¼ blood domestic tops.

Prior to the opening the opinion was very generally held that worsteds would maintain their lead and that taking all factors into consideration business in tops in 1927 would be on a much more satisfactory basis than in the two previous years.

Need of Basic Facts

(*Continued from page* 134)

new product secured its share of popularity at the expense of established lines. Some knit underwear manufacturers added the new type of garments to their lines and preserved their markets. However, with the outbreak of the war the industry found relief from a situation that was beginning to make itself definitely felt. Retailers were confronted by the necessity of reducing, or at least controlling overhead costs and were at the point of placing the burden of cost against specific departments. Underwear appeared to be less than profitable as an item of merchandise under the conditions then prevailing, because of the duplication of brands, styles and weights and the frequency of broken stocks.

Price and Capacity Inflation

The extraordinary conditions developed by war demand had the effect of further expanding the facilities of production and of consuming the accumulated stocks then in the hands of retailers and distributors. We finished the war with an apparent shortage of every kind of merchandise and a hungry demand from consumers. To assure sufficient stock, retailers duplicated orders among manufacturers, thus creating an appearance of much greater demand than actually existed, with rapidly ascending prices. Suddenly it became apparent that markets were more than satisfied and manufacturers were caught with excessive inventories of materials and distributors had greater stocks than they could sell, with orders still to be filled with more. Cancellations, returns and repudiations of agreements followed. During a period of war inflation costs of every kind had mounted to previously unknown heights and could not be adjusted to the new situation. Manufacturers' prices declined rapidly, but retailers could not reduce prices fast enough to move their surplus stocks. A buyers' strike was begun by the consumers who could see no reason for high prices and retailers were generally abused.

With the debacle of prices and the buyers' strike, industry came to a pause, with unemployment and general alarm for the future. Out of that situation industry and commerce had to emerge and find new foundation for their prosperity. Stocks melted slowly, retailers bought cautiously and industry displayed equal caution in purchasing materials. "Hand-to-mouth" buying became the practice. Manufacturers believed that as soon as normal markets were re-established retailers would resume their practice of buying a season's requirements in advance, but retailers had adopted new practices that precluded a return to former methods. Retailers declined to buy in volume, or to anticipate requirements; they had committed themselves to the practice of buying for the greatest attainable frequency of turn-over of merchandise. They learned to budget their buying and adopted methods of merchandise control. This led to a degree of concentration on a few lines and a relatively small range of prices.

Business was stimulated by consumer credit and a variety of commodities came into immediate competition with clothing and the various essentials. The manufacturer, wholesaler and retailer each adapted himself to a situation that he could not control and is only now beginning to understand. In many lines, beside knit underwear, mass-production has had to give way to operation on reserve stock, governed by the gradual flow of orders during the season. Capacities are in excess of demand and the cost of selling is high, because of the smallness of orders. The problems of production reflect the difficulties of distribution.

The situation of the knit underwear industry is not generally different from that of other textile industries, even in the fact that approximately 14% per cent of the industry produces upwards of 60% of the total value and possesses capacity to produce a considerably greater volume. It is apparent that a relatively small, selected, percentage of the industry could satisfy total demand in present volume. Individual executives and the managements of single concerns are not generally familiar with all of the basic facts relating to the situation of the industry.

Production Versus Requirements

There is neither measure of consumption, nor of distribution. There is an ever-growing competitive pressure to secure markets, or to retain markets. That some concerns will withdraw under economic pressure is certain, for the industry is both over-equipped and over-manned. There will be nothing new in that situation, for the obsolete, unprofitable, or undermanaged enterprise has always been eliminated under economic pressure. The answer to the present problem will be found in a better adaptation of production to the requirements of distribution and a more definite knowledge of the extent and capacity of markets. The retailer has found a means of profitably distributing underwear, will the manufacturer find an equally profitable opportunity in his field? It may require the assistance of the Government to secure the basic facts essential to the solution of the problems confronting the entire textile industry, but looking back from sometime in the future it will be noted that the industry made steady progress, while some members who could not adapt themselves to the rapidly changing conditions dropped out during the period following the World War.

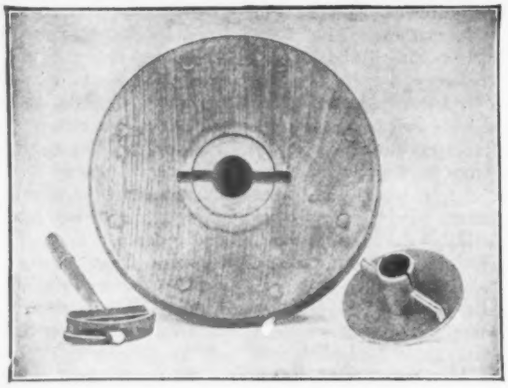
International Wool Statistics

(*Continued from page* 140)

notably, because its independent position offers the best guarantees for absolute impartiality. This fact is of the highest importance, considering the delicate nature of the undertaking and the legitimate diffidence which is liable to arise when such work is entrusted to an organism less trustworthy.

Enough has been said to show that really complete statistics for wool are earnestly desired by those interested, that accuracy in this sphere of operations is a necessity for the protection of the public as consumers, and that a well-defined plan of campaign has been prepared. It may be hoped that such difficulties as exist will, in due time, be overcome by concentrated effort.

Owing to the great distance of Australia and New Zealand in one direction, and of Argentina, Uraguay and South Africa in another, all discussions and any final agreement must require a certain time to elapse. But, encouraged by a mass of approval, so thoroughly confirmed by the Turin and the Imperial conferences, the Institute intends to devote its energies to securing the needful international agreements. Once obtained, these agreements will open the way for precision in details, and the continuous service of wool statistics will become an accomplished fact.



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Decline in Wool Values Continued through 1926

Large Volume of Business Done, but Unsatisfactory Year All Around—Domestic Wools Above General Commodity Level Owing to Tariff—Stable Situation Now Developing the World Over—American Markets Steady and Well Below Importing Level

THE 1926 wool year did not meet the promise made in its opening weeks when there was a rather widespread feeling that the decline in prices had ended and that good business and fair profits were in sight. Taking it all in all 1926 was the most consistently discouraging year since the termination of the war. The situation seems impossible of analysis. Topmakers and spinners never had a show and wool merchants though doing a large turnover found their profits at the close of the year in inverse ratio to large business done.

It seems now quite evident that the decline in wool values which ran all through 1925 had not completed its course. Foreign wools in general fell more rapidly in 1925 while domestic wools eased off the quicker in 1926. After two years of declining prices wools are much more stable the world over. During this two year period there have been far-reaching adjustments to changed conditions of merchandising and the end is not yet. Mills are not buying ahead of near-by requirements. Not carrying large wool stocks, the tendency is for them to carry larger quantities of manufactured goods, leaving the secondary market of goods distribution relatively bare of stocks. Speculation in fabrics as well as in wools is at a minimum. "Anticipatory cloth orders are held by the mills, rather than by apparel distributors." This leaves the secondary market bare of surplus stocks. A greater mill control of production seems pending.

The general business in wool in 1926 was slightly below that of 1925. Consumption of wool for clothing purposes judged from concerns reporting, not including the American Woolen, ran about 5 million lbs. behind. U. S. imports were approximately 298 million lbs. as compared with 325 million lbs. in 1925. The decline in imports was due in the main to restriction in carpet wool imports particularly arrivals from China. Philadelphia wool imports for 1926 ran behind about 30 million lbs.

Big Boston Business

The Boston Wool Trade inventory covering stocks of unsold wool, tops and noils as of January 5, showed an increase over 1925 of 19,176,000 lbs., the increase being chiefly in territory wool. Stocks of foreign wool contrary to general expectation ran behind about a million lbs. A comparison for 1925-26 is given herewith:

	1925	1926	Change
Domestic	34,442	54,642	20,200
Foreign in Bond	21,916	23,755	1,839
Foreign out of Bond	5,883	3,022	Dec. 2,861
Total ...	62,243	81,419	19,176

The above figures are in thousands of pounds.

The Boston market handled a larger amount of wool in 1926 than in the preceding year and although its inventory at the close of the year showed a gain of 30% over 1925 yet it was practically at the average holding of the previous seven years. The following table gives the Boston situation approximately for the period 1925-26 and is a surprising showing for one of the leanest years experienced by the trade:

	1926	1926
Inventory carryover	62	49
Wool imports	174	166
Domestic receipts	171	134
Total	407	349
Shipments by rail and sea.	201	168
Balance	206	181
Inventory January 5.....	81	62
Probable Motor Truck Del..	125	119

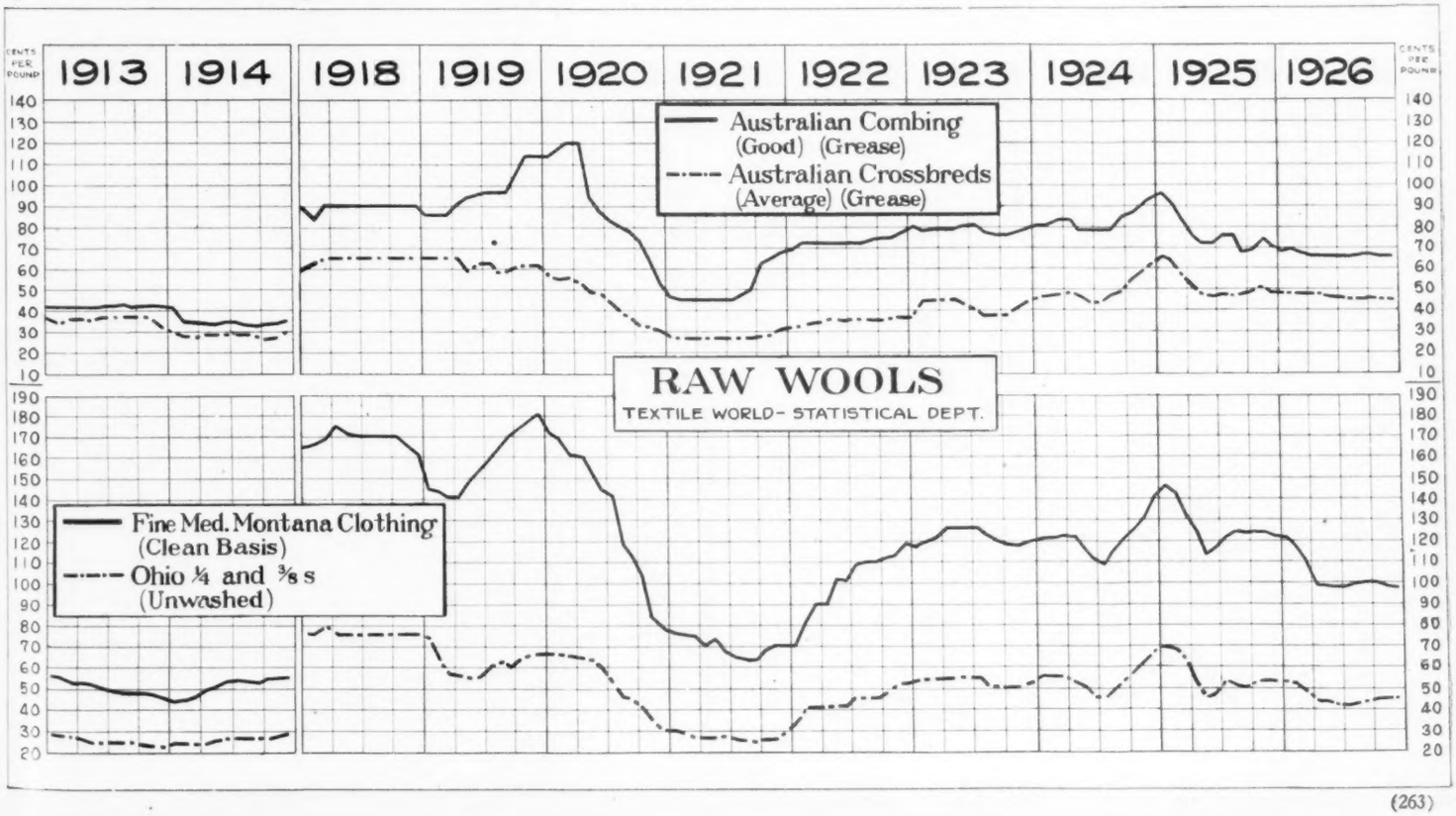
The above figures are in millions of pounds.

Stable Market Probable

A general survey of the wool situation at home and abroad seems to indicate the probability of a fairly long period of stable values, but before this actually takes place domestic wools in the American markets are not unlikely to take an upward turn based upon smallest mill stocks for years, a normal supply in the hands of dealers and pools, firm high foreign markets, particularly in fine to medium wools with America and France still abnormally behind in their purchasing and in the United States a general condition of prosperity not seen for years. There are evidences of a world wide call for manufactured goods at reasonable values and the American industry with an immense and prosperous nation to clothe may fall into line overnight developing surprising activity during the next few months.

The American wool market is quiet and easy as to prices, but the slight fluctuations downward are inconsequential and do not reflect the strong statistical position occupied by spot wools of domestic and foreign origin. The general situation is much more promising than is seen on the surface. Here and there, it may be said, are to be found mills rather uneasy over the possibility of an advancing market; this is most certain to occur if wool consumption should move upward from level already attained.

Domestic wools are quite low priced when compared with foreign wools of similar descriptions. For several months, manufacturers have been utilizing domestic in place of foreign staples; this is indicated in the consumption reports and is further substantiated from another angle by the fact that although the Australian season has come to an end of its first half, the amount of wool bought by America has been small. Further evidence is found in the neglect by America of the Montevideo wools for season to date. Our manufacturers see no reason to pay fancy prices for merinos when they can get choice



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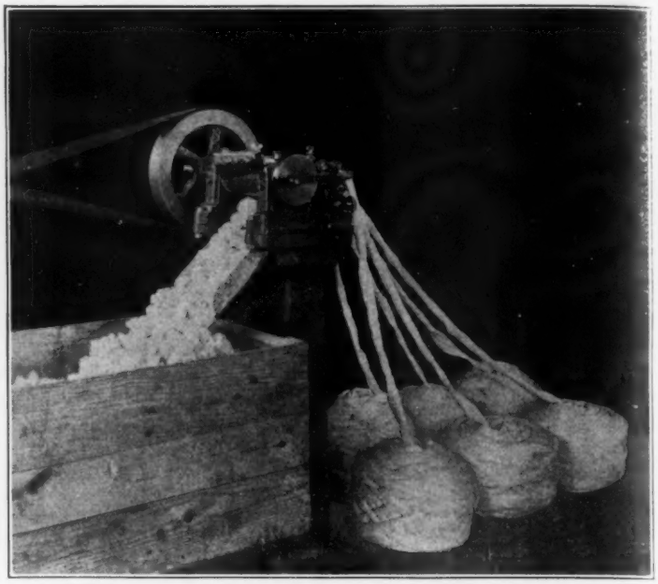

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in 24 minutes

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staple and delaine wools at prices that would save them 12-15c per lb. on their tops. One manufacturer states quite frankly that he can make his fine tops from domestic delaine at $1.35 whereas a similar top made from Australian would cost him $1.47.

There was no slump in volume of operations during 1926; as a matter of fact the mills were busier in the closing than in the opening month of the year as the following table shows, covering active machine hours:

	January	December
Wide looms	67.4%	73.0%
Narrow looms	62.6%	67.2%
Carpet looms	68.4%	67.4%
Woolen spindles	72.3%	81.0%
Worsted spindles	71.2%	79.9%
Cards	77.2%	84.2%
Combs	84.7%	88.0%
Average monthly activity	71.9%	77.2%

That the situation has been unsatisfactory from the standpoint of reasonable profits all along the line from fleece to fabric is common knowledge. Exception will probably have to be made for the self-contained units which carry along all manufacturing operations within their own plants. The phenomenon is not distinctly American. Says the well known wool authority H. Dawson: "People are sick of putting wools either into the scoured state, tops, yarns, or cloth and never getting their money back as has been the universal experience during the past two years." This English experience has been duplicated all through the year in similar American markets, wool, tops and yarns being sold at or below cost in large volume.

The general complaint is not regarding volume of business, lack of material, or particularly high prices on raw material. The British manufacturer has cheaper wool than the American but his troubles have been none the less acute. There is at this time a closer correspondence between values of wool and of its manufactured products than ever before. The margin between fleece and fabric is narrowing all the time and caught within this relative closing in of values independent topmakers, spinners and small manufacturers find a diminishing field in which to conduct profitable manufacturing operations.

Larger Wool Production

The general tendency toward larger wool production brought about largely by good prices obtained for this material is seen in the United States where the clip during the last two or three years has shown an upward tendency. The 1926 clip was approximately 269,000,000 lbs. as compared with 254,000,000 lbs. in 1925. Although the clip is larger the Department of Agriculture states that the wool growers of the country received 19% less money for their wools in July, 1926, than in July, 1925. The chief decline in prices was found in the western division covering the territory wools while the fleece wool sections were much firmer. The following table shows the situation:

Divisions	1925	1926	Percent Decline
North Atlantic	44.3c	36c	18.7
North Central	39.1c	34.8c	11.0
South Atlantic	41.8c	37.8c	9.5
South Central	37.6c	31.3c	15.4
Western	39.5c	30.1c	24.0
U. S. Average	39.4c	31.9c	19.0

In Australia wool production is increasing slightly. Estimated production over the first three seasons is as follows:

1924–25	720,000,000 pounds
1925–26	770,000,000 pounds
1926–27	775,000,000 pounds

The average weight of the Australian fleece is 7.7 lbs., which may be compared with 7.8 lbs. for American fleece. The Australian clip runs 82% merino and 18% crossbred in marked contrast to New Zealand clip which is 98% crossbred and 2% merino. As may be expected from a larger wool production sheep in the Commonwealth are on the increase, the total number rising from 93,000,000 in 1924 to 97,000,000 in 1925.

Wools and Commodities

The relation of basic wool prices to those of other commodities shows a higher relative level for this raw material. Comparison is made between prices of two standard types of domestic wool, which may be taken to represent the market, and Professor Irving Fisher's commodity index figure. Most textile indices have a July 1914 basis, but Professor Fisher's commodity index is based upon average 1913 values. Domestic wools in July 1914 were well above the 1913 level but the foreign wool situation was very irregular; the South American group was lower, Cape wools higher, Australasians irregular.

Taking 1913 average prices as the basis for an index figure on domestic wools, and so comparable with the general commodity index, the following comparison is possible showing, firstly, a relatively higher wool level than for commodities in general and, secondly, that the decline in wool prices during the year 1926 was more extreme than the general commodity decline.

	Ohio Medium	¼ Blood Staple	Fisher's Index
January	209	218	159.7
December	178	190	146.5
Decline	31	28	13.2

In order to make comparison of the course of domestic values with British wools and commodities it will be necessary to use a 1914 basis for domestic wools. The price of medium Ohio, covering ⅜s and ¼ blood grades, in July, 1914, was 27c while at the present time its market value is 45c, giving an index figure of 166. In January, 1926, this wool was 53c yielding an index figure of 196. Half blood staple in July, 1914, clean basis, was 59c and its current price is $1, whereas in January this year the wool was selling at $1.15 giving an index figure of 195 as compared with 170 at current price. The following comparison now becomes possible (averaging the American indices):

	American Wool	British Wool	British Index
January	196	135	147
December	168	126	140
Decline	28	9	7

From the above comparison it would seem as though British values during the year had been steadier than American and the decline much smaller. The fall in the British wool figure of 9% as against 28% in American wool is quite in keeping with and confirmatory of the general belief in the wool trade that domestic wools during the year have declined to much larger degree than foreign wools.

The wool markets in the United States in mid-January 1926 were moderately firm in tone and there was a fair measure of confidence in the stability of values but buying on the part of manufacturers was very spotty and prices were slightly in favor of the buyers but the opening of goods for fall and winter wear occurring at the end of the month brought the mills into the market in larger number and imparted a stronger tone to prices. Medium wools were firmer than fine wools; contracting was still hanging fire and the trade showed little inclination to enter the western field. Foreign markets were steady but an enormous quantity of wool had yet to be offered at the various primary and distributive centers.

Demand for wool in the Australian markets was moderate only. Melbourne prices were inclined to sag while the Sydney market opened on basis of December's closing. Continental operators were out of the market owing to disturbed financial conditions. During the first half of the Australian season France alone took considerably over 400,000 bales, almost as much as the British purchasers. The foreign wool situation the world over was at this time distinctly without trend.

1926 Heavyweight Opening

The amount of business placed in the American goods market up to the end of February 1926 was much smaller than expected. Prices on all kinds of fabrics, worsteds, woolens and overcoatings were at least 10% lower than at the 1925 opening, but this reduction in price failed to overcome the apathy of goods buyers who continued to place new business in small orders spread over a number of styles. An uneasy suspicion haunted the wool market that in spite of all talk to the contrary there had unquestionably been an overproduction of clothing materials. The goods opening had not changed the raw material situation to any noticeable degree. Shipments on old orders were still heavy but new business was spotty, sales being made on the low side of quotations and this in spite of the fact that really good wools for the manufacture of worsteds were considered quite limited. The demand from carded woolen manufacturers failed to materialize. All kinds of scoured wools, and pulled wools were inactive.

Wools in the United States market in mid-March were about 25% lower than similar date in 1925 with foreign wools approximately 30% lower. Stocks of domestic wool were quite small and yet in spite of this little or nothing had been done to acquire contracts on the new domestic clip, shearing of which in the early states had already commenced. Imports of foreign wools continued large. The New York goods market seemed to be unusually well posted on the raw material situation. Some buyers were holding back cloth orders in expectation of a lower wool level. Stocks of tops and yarns everywhere were said to be reduced to a low point. Clothing manufacturers were taking a casual interest only in the fall and winter offerings.

Contracting in April

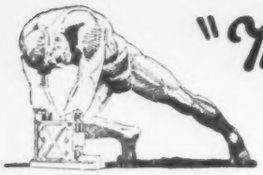
The wool markets in the United States declining since the first of the year made a temporary halt in April. Contracting broadened out in the western territories in late April. Purchases were reported in Montana, Wyoming, Idaho, Washington, California, Texas, Arizona and Utah. The famous Jericho clip which usually establishes the pace for fleece wools was held by the pool for 40c; this price being the upset price put upon the collection with the governors of the pool awaiting events under the impression that they would get their price a little later on. Shearing had commenced in Texas and California. Wool buying in the West on a rising scale had not been supported by any show of activity in the goods market or by any larger interest in the Western wool clip by manufacturers who in other seasons had set the pace for the legitimate wool merchant. The charge of collusion and boycott brought against the Boston Wool Trade by a representative of the Michigan Wool Growers speaking before the committee on Agriculture in Washington seemed positively absurd to those in close touch with Summer Street. The point was made that the wool trade had deliberately imported huge quantities of foreign wools for the primary purpose of depressing domestic wool values. Foreign wools were in fair stock and in some cases offerings were beyond the capacity of the market to absorb, especially in medium and low Montevideo crossbreds, which continued to move on a low basis.

Jericho Clip Sale

The noted Jericho clip which had been held by the pool for 40c, was sold in mid-May to a western concern at 34½c or approximately $1.05 clean landed Boston. Wool prices were now on a much lower level than in September 1925 at which time the reaction in values was checked and an upward movement took place culminating near the end of the year. One of the largest domestic clips for many years was waiting to be marketed, not more than 10% having been placed under contract. Wool growers could not understand why domestic values should be so low with the highest tariff ever enacted in the United States in force. The fundamental explanation was that the mill demand for wool had been abnormally small following a very unsatisfactory opening of the heavyweight season. Firmness in foreign markets unquestionably prevented the local market from registering any extreme decline.

Situation in Fall

The wool situation in the early fall seemed to be shaping up for larger business at prices which had been maintained without great difficulty for



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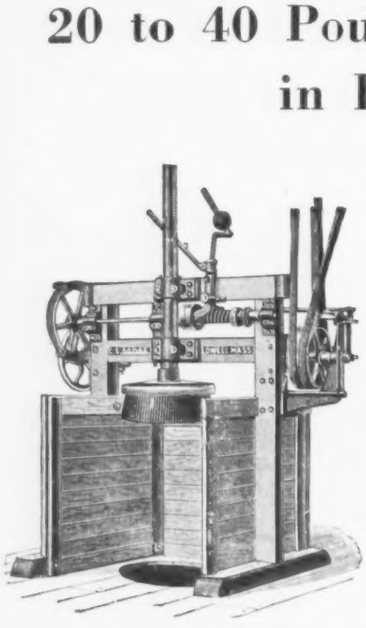

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172-3

several weeks. A stable market in raw materials seemed in prospect. There was no scarcity of wools so far as sellers were concerned but there was some reason to believe that consumers had relatively less wool in their warehouses than for several seasons. Territory wools were selling quite well but fleece wools were slow though strong. Australian wools 64-70s and 64s combing were moving out of bond and the South American crossbreds were firmer in price though still quite irregular. Carpet wools were slow. Imports of China wools had fallen off very considerably. There was a large quantity of wool in China both of the carryover and the new clip which owing to civil war conditions could not be exported.

The strong situation apparent in Australia and in London stiffened the wool market and lifted prices slightly for similar wools in bond. Manufacturers were a unit in opposing higher prices for raw materials. When the fourth series of auctions closed in London in July quotations were 2-4c per pound lower on merinos as compared with closing prices of the third series but from par to 3c per pound higher on crossbred. During the four series of sales ending July 28 there was 57% more wool sold than during the four series of 1925.

Australasian New Season

Manufacturing indifference to the Australian opening seemed surprising to some sections of trade. America had purchased practically nothing during the new season. The reason lay close to hand. Domestic wools of similar grade were relatively so low priced that it was to the interest of mills to procure supplies to the fullest extent possible from wools of domestic origin. The following table shows some domestic wools and comparable types of Australians, with duty added in bond December:

	Domestic		Australian
Fine territory..	$1.12	Super 70s	$1.38
½ blood	1.03	60s-64s	1.24
⅜s blood	.92	58s-60s	1.16

The growing depression in the Bradford market was a matter of interest and comment. London spot wools had been too high for the Bradford manufacturer. America instead of buying wool in London and Australia had actually been a seller in the foreign markets. The New Zealand season opened up strongly at Wellington, November 15. The catalogue covered a good selection of wool in fine condition and quite sound. At least 90% of the offering was sold in an active market featured by a keen demand especially for the low qualities. American bought chiefly in the super wool but Yorkshire was quite active on all descriptions. The following table compares March New Zealand prices on old with November openings on new clips and gives also quotations in bond in Boston for similar grades:

	March Closing	November Opening	Wool in Bond
48-50s	53c	51c	50-52c
46-48s	48c	45c	47-48c
40-44s	41c	40c	42-43c
	142	136	141

These prices are all clean basis landed in bond.

An unusual feature of the year was a decision of the United States Customs Court made June 14 in New York that Argentine 6s were to be included in the carpet wool class covered by paragraph 1101 sustaining the protests argued before the Board of United States General Appraisers in the name of the Bigelow-Hartford Co. The testimony at the several hearings taken at Boston, Philadelphia and New York was very voluminous, covering seven hundred pages. The wool trade was quite divided on the question as to whether these low-grade wools, the lowest in the world with one exception, could under the provisions of the tariff be brought into the country to be used under bond for the purpose of carpet manufacture, free of duty. Well-known men of Summer Street appeared on both sides of the case and the decision was of such far-reaching importance that the government took an appeal to the United States Court of Customs Appeals, Washington.

Associate Justice Brown, writing the majority decision, said that the evidence was overwhelming that this importation was very much inferior in grade and class to the wools especially mentioned in paragraph 1101 of the Fordney-Macomber tariff law. "We therefore hold as a matter of law that the wool before us is not improved within the meaning of the language of paragraph 1101 by the admixture of merino or English blood and therefore that it is properly classifiable under paragraph 1101 and as such subject to the rebate therein provided if actually used for making carpets." Associate Justice Sullivan concurring in the finding of Judge Brown stated: "I base my conclusions on two questions of fact that I feel are established by this record: first, the wools are not improved by the admixture of merino or English blood; second, that the wools are native of South America." He further stated, "I am satisfied from the records that wool of English blood is that of the Down sheep. It cannot be from the Cotswold or other breeds. I am satisfied this wool is not improved by the admixture of English blood. The wool in question is a native of South America."

Associate Justice McClelland, dissenting from the majority opinion said, "The Government position is that Lincoln wool being of English blood is therefore neither one of the wools specifically mentioned in paragraph 1101 nor a wool of like character and description to either of them. By a very decided preponderance of the evidence in the case it is shown that the involved merchandise is a Lincoln wool of English blood." The importers filing the protest claimed that the wool in question, some 15 bales, should have been assessed under paragraph 1101 relating to carpet wools instead of 1102 covering combing and clothing wools.

Substitute Fibers Have Fair Year

Good Specialized Demand for Materials on Declining Market—Heavy Rag Imports—Worsted Waste Output Larger

RECOVERED wool manufacturers during the year 1926 did quite as well as any other branch of textile manufacturing and probably a little better. Volume of business was about equal to that of 1925, but the general market closed the year well below its opening. There were upward price spurts during the period that helped the situation materially. The year 1926 witnessed a large consumption of high-priced foreign rags, although imports fell behind those of 1925 by several million pounds. The woolen rag trade was handicapped the entire year by the specialized demand for a few materials which although bringing relatively high prices did not compensate the graders unable to move their coarse dark stocks.

Substitute wool manufacturers are expecting the opening period of 1927 to bring in at least as much business as seen in similar period a year ago, possibly a larger call for materials inasmuch as all prices from raw materials to fabrics are and will be on a lower basis. The woolen industry is much more suitable to the maintenance and profitable operation of small units of relatively limited capital than the worsted branch of manufacturing where the tendency is toward large organizations capable of taking wool right from the sheep's back and turning out the finished fabrics. Woolen mills will undoubtedly be in the market for substantial quantities of rags, clips and fully processed materials.

The decline in the wool waste market, going on steadily for months has been in strict relation to the fall in wool prices so that at the present time while the average price of wool is about 14% lower than it was a year ago, the average price of several representative wool wastes is about 16% lower. Wool wastes have maintained themselves during the decline more firmly than have either noils or woolen rags. In the case of worsted colored threads which have been more or less of a drug on the market over the entire period the general price of this commodity as related to wool is about the same as it was a year ago, low then, low now; but in all other wastes there has been a decline relative to the wools of which they are by-products.

Larger Worsted Waste Output

The general trend in wool manufacturing which for a considerable period has been favorable to those of woolen construction has had the effect of maintaining a good, high price level on all kinds of light colored and white rags, clips and substitutes and in particular the waste output of the worsted branch of manufacturing. During the year 1926 worsteds gained on woolens and this reversal in trend will probably go further. In which case the output of worsted wastes will be relatively larger than for several years past while the consumption of them by woolen mills will be relatively smaller. High prices for waste brought about in the main through relative shortage of supply are not likely to be seen during 1927.

Manufacturers of reworked wools and the various houses dealing in woolen rags and clips had on the whole a fairly satisfactory year in 1926 although it came to a very quiet close. Taking the year and comparing it with 1925 it is likely that about the same amount of business was done. In the English markets the case was much less promising. Says an English authority the year 1926 will be remembered as one of the most difficult periods ever experienced in the trade. During the early months the outlook appeared to be very promising and prices generally reached a high level. As the spring advanced a gradual decline set in, although good business was done up to the development of the great strike which crippled for a time all industry. Since that time there has been little chance of recovery, for while the finer and scarcer grades have, as usual, held their place both in value and demand, the great bulk of rags coming in the market has met with a less favorable reception, and somewhat embarrassing stocks have been left in the hands of merchants and sorters.

British Rag Situation

The British woolen rag market is similar to the American in one important particular in that it imports more rags than it exports. The following table gives British imports and exports for the years named of old woolen rags:

	Imports	Exports
1926 lbs.....	54,400,000	20,500,000
1925 lbs.....	65,800,000	21,000,000
1924 lbs.....	79,900,000	12,700,000

The old rag business in the Dewsbury market opens 1927 quietly. Only a few of the finer grades meet any demand. Prices though not quotably lower are shaded quickly enough on the appearance of possible business. The following comparison is between worsteds and serges in the Dewsbury market:

	January 1927	January 1926
Blue worsted clips.....	150	160
Blue serge clips.....	65	75
Old blue worsted.....	60	62
Old blue serge.....	27	32

The above figures represent shillings per cwt of 112 pounds. The wide stretch between worsteds and serges may be noted. The old blue worsteds are much higher than similar rags in the American market, approximately 12c a pound. This is a sufficiently wide margin to allow of export. A further comparison may be made on white materials in the same market:

	January 1927	January 1926
White berlin	180	235
Colored berlins	90	110
Shetland gray coarse stockings	120	140
White coarse stocking...	175	190
Fine white flannel.....	180	180
Coarse white flannel.....	125	140

The above prices represent shillings

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per English cwt. of 112 pounds.

There are at this time approximately 70 establishments in the United States devoted to picking, carbonizing, dyeing and carding of old woolen rags. Many woolen mills, however, buy large quantities of rags converting the same on their own premises and these mills are also the largest purchasers of clips which are the new materials from various cutting-up establishments of the country. It might seem a fair estimate that the woolen, knitting and felt mills of the country convert old rags to an amount equal to the entire output of the "wool shoddy" industry proper.

Substitute Production Increasing

The production of recovered wools in 1925 was 67,000,000 pounds and if the mills doing their own converting produced say 53,000,000 pounds this gives a total of 120,000,000 pounds as representing the amount of reworked materials consumed by the woolen branch of the industry. Consumption of virgin wools during the year 1925 was 526,000,000 grease pounds for concerns reporting or approximately 657,000,000 pounds for the country as a whole. If the average shrinkage is estimated 40% the consumption of clean wool would be 394,000,000 pounds for both branches of the industry with the addition of 120,000,000 pounds of reworked materials by the woolen branch.

Although the complaint is heard from time to time both from fiber manufacturers and rag graders that general business is poor yet as a matter of fact the industry as a whole for the last five or six years has shown steady improvement indicated by increasing production of recovered materials year by year. The Department of Commerce biennial census figures covering "wool shoddy" for the years 1921-25 show the steady expansion made by the industry. The following table gives the situation in brief:

	1921	1923	1925
No. of establishments.	53	59	67
Production in lbs.....	27,000,000	55,000,000	67,000,000

Rag Imports Expanding

The consumption of foreign rags has been gaining steadily in the last four years. Mill demand has been so largely upon white and light colored materials of good length of fiber that domestic graders apparently have not been able to meet this call from the mills. The Fordney-Macomber tariff bill which went into effect September 22, 1922 placed a duty of 7½c per pound on imported rags which has practically had no effect in preventing growing imports. The general foreign business in rags has been featured by the importing of high priced rags and the exporting of low-priced rags. The following table shows imports and exports for the years covered by Government census figures:

	Imports	Exports
1921 lbs.....	2,756,000	1,863,000
1923 lbs.....	11,397,000	10,988,000
1925 lbs.....	23,382,000	2,380,000
1926 lbs.....	20,200,000	9,680,000

Rag traders had a uniformly poor year in 1926 and only those houses able to export low priced colored materials experienced anything like a normal merchandising year. The average rag grader has been in a very disadvantageous position. He has been forced to ask high prices for materials like knits and hoods by the very apparent fact that the greater bulk of his materials has been practically unsaleable except at a sacrifice. If rag graders were able to obtain a fair market for a larger percentage of their grading they would be better pleased with the situation. The woolen rag market as the year came to an end showed a larger decline in values than in other textile markets such as wool, yarns, noils and mill waste. As compared with the beginning of the year old materials were off 23-25% whereas the wool market and its secondary markets were off about 15%. The following table of comparative prices shows the situation:

	January 1926	January 1927
Fine white merinos.....	24 –25c	16 –16½c
Fine dark merinos.....	7 – 7½c	5 – 5½c
Coarse light merinos.....	10½–11c	7½– 8c
Blue serge.....	14½–15c	7 – 7½c
Black serge.....	9 – 9½c	6 – 6½c
White knit.....	45 –46c	40 –41c
Light hoods.....	26½–27c	20 –21c

It will be noted from the above table that blue serges had the greatest drop in price being off 50% while white knits held firmly, declining 9% only.

Mercurial Rag Market

The general market covering rags and clips showed no comeback as the year closed and was without resiliency. The price weakness visible was not caused strictly by "distress" selling; such occurs in other markets but rarely in this one. It was in the main due to the instinctive action of a number of individuals, graders and traders unusually and abnormally sensitive to the supply and demand situation. The group temperament of the woolen rag market is highly mercurial to which may be opposed, for sake of contrast the wool market which is temperamentally slow, far-sighted and conservative. If a grader cannot sell his stock today at a profit he will sell it next week at a loss. And so it goes. The woolen rag market is weaker than necessary. Cutting prices had not brought in consumer buying. Not content with cutting prices unnecessarily low it must on the appearance of business rush them up unnecessarily high. And so the thing goes; too high one month, too low the next month. Blue serge at 17c at one period down to 7c in the following period, both embraced within a few weeks' time.

Waste Prices and Imports

The wool waste market was not quite certain of itself at the close of 1926 and the easing off in values was ascribed to the desire of some of the small traders to liquidate their holdings on direction of the banks. The large wool waste houses were in a very strong position, some of them holding materials well below the market and considering it a good policy to speculate on the near future by placing prices on the several wastes on a level that the wool trader proper could not accept. The situation was fundamentally strong and likely to continue so unless it should turn out that worsteds at the goods opening should gain large business at the expense of the woolen branch of manufacturing. The following table comparing several representative wastes shows an approximate decline of 15% in value during the period:

	January 1926	January 1927
Fine drawing lap..	$1.30–1.35	$1.10–1.12c
Colored drawing lap	1.05–1.07	85–88c
Fine threads.....	1.00–1.03	78–80c
Quarter blood threads	53–55c	53–55c
Fine card waste....	60–63c	50–53c

The surprising feature of the market as indicated by the above comparison is the strength shown by ¼ blood worsted threads. Total imports of wool waste into the United States for the last five calendar years were as follows:

	pounds
1926	4,100,000
1925	4,763,000
1924	6,200,000
1923	6,727,000
1922	10,899,000

North-to-South Trek of Cotton Mills

(*Continued from page 156*)

able number of northern knitting mills that have either moved South or established southern branches, nor a number of dyeing, bleaching and finishing plants that have either built southern branches or have sold machinery South. Among the latter are the Sayles Finishing Plants, Biltmore, N. C.; U. S. Finishing Co., Cedartown, Ga.; Lowell Bleachery, Griffin, Ga.; Holliston Mills, Inc., Kingsport, Tenn., and Pacific Mills, Lyman, S. C. The Nyanza Mills, Woonsocket, R. I., sold two mercerizing machines and complementary equipment to a Georgia mill and several other similar transfers have taken place. A number of miscellaneous cotton mills have been moved from the North to the South, among which may be mentioned the L. R. & R. Co., Providence, R. I., which moved a plant of 500 braiders to Louisville, Ky., and the Massaoit Mfg. Co., Fall River, Mass., which started a branch plant at Lake Charles, La.

Age of Machinery Moved South

A questionnaire sent out by TEXTILE WORLD, asked mills to give average age of machinery moved South. This data was given for a total of 298,216 spindles and 3,529 looms. These totals may be grouped as follows: Under 10 years, 68,200 spindles and 300 looms; from 10 to 20 years, 117,368 spindles and 3,229 looms; 20 years and over, 112,648 spindles.

The Favored Southern State

One of the interesting features of the report is its disclosure of the distribution by states of the machinery moved from the North and new machinery that has been added to southern branches of northern mills reporting. The distribution by spindles and looms and by states arranged alphabetically is shown in the following table:

State	Spindles	Looms
Ala.	105,920	1,022
Ark.	25,000	40
Ga.	168,380	829
N. C.	45,000	352
S. C.	100,000	1,064
Tenn.	111,648	2,438
Texas	39,200	.....

Operating Time North and South

Northern mills which had moved South were asked to give average full time hours per week operated North and average full time (day and night) hours per week operated South, and the replies were as follows: North 54, South 57; North 48, South 110; North 48, South 115; North 48, South 60; North 48, South 107½; North 54, South 60.

Comparative Costs

Under ordinary conditions comparative costs mean little unless counts of yarn spun, construction of cloths and other details are given with some exactitude, but when mills give comparative costs North and South on the same yarns and cloths, as some manufacturers did, the figures are of more than passing interest. The replies received for this part of the questionnaire were as follows: Yarns —30s, 2 to 4c a lb.; 18s, 25%; 5 to 10c per lb. depending on counts. Cloths—6 to 8c per lb.; 7c per lb.; 10 to 15c per lb.; 10c per lb.; 5c per lb.; 4c per lb.

Comments like the following also were made: "Lower taxes and other costs necessary in New England."

"On account of cheaper living conditions labor probably will always be cheaper in the South. If the movement to shorten working hours in the South, now beginning to be noticeable in some States, materializes, the present great advantage over the North will be eliminated."

"We feel that the variation in the hours of labor is the main handicap and if the hours of labor were uniform in all states we could compete."

"New England during the next few years must make specialties the South are not interested in. Any single yarns or cloths (even high grade) that can be sold in volume, the South can and will make cheaper than New England."

Business to be All Right

By John E. McLoughlin

President, McLoughlin Textile Corp., Utica, N. Y.

From the present outlook it seems business will not be as good as in 1926. On the other hand, a little later things may shape up differently and become better. Stocks of merchandise in the hands of dealers are very low. Jobbers and retailers have a tendency to purchase from hand to mouth just for actual requirements. Later in the season they will probably see the fallacy of this, in that they will be obliged to wait for merchandise. Personally, I think business is going to be all right for 1927, but it is starting off a little hesitatingly.

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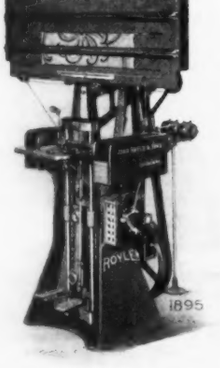

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1926 a Trying Year for Broadsilk Mills

Overproduction of Printed Goods for the Spring Causes Huge Losses—Many Firms Operate at Profit Due to Good Management—Trend to Weighted Goods Noted—Tie Silks in Demand All Year

THE year 1926 will go down in broadsilk history as a year when management and foresight played a dominating part in the conduct of all concerns engaged in the difficult task of manufacturing and selling silks. It was not a year when all a manufacturer had to do was to sit back and let buyers clamor for his merchandise, nor was it a year of large and universal losses. It bore no resemblance to the year 1925, for instance, when silks moved easily due to an all embracing demand and a steadily advancing raw market. In no way could it be likened to years when heavy declines in the price of raw silk coupled with panic stricken dumping of merchandise, left the vast majority of the trade in the red and the minority just over the border line of profit.

To repeat, it was very definitely a year when foresight, prudence and management had their just rewards. Those firms that banked too heavily on a spring demand which would clean out stocks of goods made up in tremendous quantities during the fall months of 1925 on a $7.00 raw silk market, fell into difficulties. To some it meant a friendly receivership; to others it meant that they would have to operate at a loss for the 12 months accounting period, while to still others it meant that steady and persistent efforts for the balance of the year would give them a small though inadequate reward.

In spite of all the difficulties in the way of overproduction of specific types of goods, falling raw prices, and keen competition all the way around, many concerns have done well. Some have been merely fortunate while with others it has been the hard earned reward of good management. If this word "management" seems to be overemphasized, remember that throughout the year in all the varied activities that go to make up the silk industry, it has been emphasized in a thousand ways and no repetition here can adequately reflect its importance.

If management has pointed the way, overproduction and the resulting keen competition have dominated the activities of manufacturers in 10 out of the 12 months. There is little question but what mills overproduced several classes of merchandise during the fall months of 1925 and the early months of 1926. The balance of the year has been a struggle back through the mazes that this excess of confidence had created. In threading this maze, the path of the manufacturers has not been made easier by an advancing trend to raw silk. As a matter of fact, over a major portion of the period the trend has been downward.

The principal difficulty in the first half of the year had to do with an overproduction of printed materials. On top of this the cutting up trade at the end of February became suddenly ultra-cautious and demand from this source ceased with a suddenness that was magical. Whether the dress manufacturers suddenly sensed a situation that had developed in the broadsilk market that was in part due to the surfeit of prints, or whether they experienced an equally abrupt stoppage in the demand for their output, cannot be said with any degree of certainty.

In any event the results were the same. With no warning, as if by a prearranged signal the volume sales of silks to the cutters ceased. Over the month of January the good business noted all during 1925 had been well maintained. Goods were coming in from the dyers and going right out. Capacity operations in nearly all mills were causing some slight surplus but apparently not enough to cause any uneasiness. The printed materials were not going out as fast as the houses handling them would have liked to have seen them go, but they were moving in a fair way. During the first three weeks of February all was well; then out of a clear sky, the abrupt change.

From about Feb. 20 goods stopped moving. The date is given with this unusual degree of exactness because the writer has had the privilege of viewing the sales ledgers of a number of representative silk concerns. These have ranged from the small to the medium large firms and all agree on the day very closely. So closely do they agree that the thing seems almost uncanny. It was as if some hot, searing wind had touched the entire trade with its torrid breath leaving the demand withered and dead. Houses dealing with retailers in part or exclusively did better, considerably better. Their retail accounts bought well and heavily through March, April, and in many cases through May. There was no let-up in the retail demand until June when the normal summer quiet prevails nine out of ten times.

Difficulties Increase

Needless to say, the sudden cessation of buying left a majority of silk firms in a none too comfortable position. Inventories of piece goods accumulated at an accelerated pace and to add to the difficulties the raw market started to decline. The exact reason for the situation is hard to give. Some ascribe it to the rumors of large holdings of prints. In any event the results were costly to the manufacturers who lacked any outlet except to the cutting up trade.

During the months of March, April, and May their difficulties multiplied. Here and there during these months speculative buying of large quantities of merchandise held by hard-pressed manufacturers went on. Dress houses simply sold the stuff that was on their racks which appeared to be plenty and bought a few pieces here and there to fill in. And as noted before the larger cutters dickered for the distress lots that were beginning to make their appearance. Prices represented merely how much of a loss the mill owner was willing to take in order to move the goods and raise some cash to meet maturing obligations.

Flat crepes and satins which had been bringing from $2.10 to $2.25 a yard all during the last half of 1925 and the first two months of 1926 were being offered at $1.85 with no takers. In the meantime costs were coming down as the raw market was declining but this was no help to the manufacturer who had $7.20 silk locked up in goods for which buyers were offering $1.65. Even lower prices for this grade of merchandise were dinned in the ear of the harassed operators. The previously popular georgettes were noting proportionate declines but losses on this type of goods appear to have been nominal due to the good demand that had left no stocks of any importance.

More About Prints

So far we have merely mentioned the situation in prints without going into details. If losses were heavy in the plain merchandise they were staggering in the prints. Some houses managed to do fairly well by going after business early and then booking forward sales at closer prices which buyers took in at the contract price. These were the exception. Preparations for a printed season proved to be too large to permit any but a few to fare so fortunately. To characterize the preparations for the season as heavy would be entirely inadequate. They were staggering, as it afterwards turned out, and the losses absorbed were even more staggering.

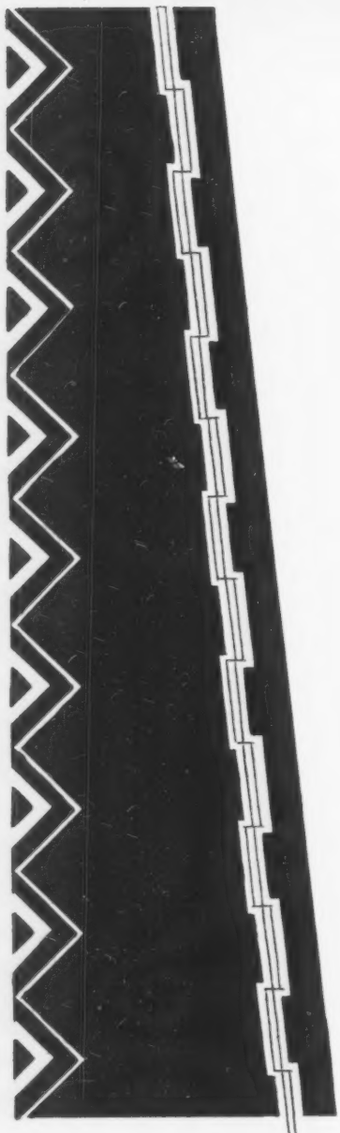
To understand what the situation was in prints one has to go back to 1925. In 1925, fashion creators developed the ensemble mode, which employed in most cases prints not only for the dress itself but also for the coat or cloak that went with it. This naturally doubled up on the demand for prints which were used in the coat in contrasting patterns to achieve the ensemble effect. Under such favorable conditions it was inevitable that print houses should make very large profits. As in the case of any whim of fashion it appeared that there would never be enough goods to go around. It can be pointed out here that there never will be.

Forgetting that the popularity of prints in 1925 ordinarily could be counted upon to kill their chance of success the following season, manufacturers decided that they would have enough for 1926. They did. But the cycle of style demands something new, something different. The people who bought prints in 1925 did not want prints in 1926. Having taken care of those who could pay the full price for prints as a style article, common sense should have told the silk men that the only consuming public they could reach in the second season would be those who bought them on a price basis. This is just exactly what happened and prints moved in volume in 1926 only on a price basis. And what a price basis it was!

The most popular print qualities are made up to sell wholesale at between $2.00 and $2.50 a yard with the accent on the higher price for printing is a costly process and the risk involved, moreover, justifies a much greater profit margin. When the season turned slightly sour, mills began to offer them at $1.90. Some moved but not many. Then $1.75 was the price and then $1.50. By this time print houses were selling at a loss and it is likely that lines of worry began to furrow the brows of those responsible for the creation of these creations.

In April, and in May when the real debacle began, the prices moved off slowly but surely. It was no longer a question of minimizing losses; it was simply a matter of getting out from under, for print houses have to pay for raw silk and manufacturing and selling expenses just like other firms. It finally came to the point where these goods were selling at $1.00 a yard and no small amount of merchandise was dumped at 80c. To appreciate what this means, it is necessary to remember that these goods cost certainly $1.50 for the cheapest and probably in a majority of cases between $1.75 and $2.00. One or two of the stronger and larger firms, simply stopped trying to compete and withdrew their goods from the market. Some of them are held today and will be sold during the coming Spring.

By the end of June the worst was over. Naturally the presence of all the printed goods at such cheap prices, far below plain materials, put a large dent in the demand for the staple materials. In the meantime raw silk had declined as low as $5.75 by the end of April but by June had rallied well above $6.25. This was due to the willingness of manufacturers to go ahead with fall materials such as satins and Canton crepes. The fall season opened in June and despite the forced sales of prints, got under way in good style. Through July, August, and even September there was a large



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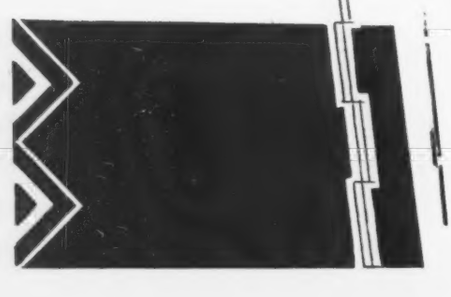

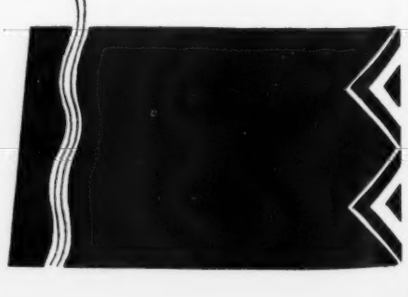

movement of goods. Competition remained keen and much of the merchandise had to be moved at close figures, particularly the pure dye merchandise which was steadily being supplanted by weighted stuff. During these months there was a steadily increasing interest being shown in the heavier qualities of georgette notably the three thread. Two thread georgette which had been the biggest thing in 1925 gave way entirely to the three thread.

Weighted Goods Strong

The weighted merchandise went out of the fall season in strong fashion. Stocks were small and mills were encouraged to maintain production in anticipation of the Spring in 1927. While the weighted goods ended the season with a minimum of left-over stocks, the same cannot be said of the various pure dye qualities. Pure dye crepe-de-chines, flat crepes, and Canton crepes had been piling up and during the balance of the year there occurred in a very modified way a repetition of what had happened in prints in the Spring. Prices were not slaughtered in any such fashion as with the prints but they were marked close, very close.

Despite the competition with pure dye merchandise mills have gone ahead with preparations for 1927. Weighted merchandise has as a rule been made up although the decline in raw silk in November encouraged some of the pure dye houses to keep their looms running on the basis of the lower prices available. Principal preparations appear to have been made in georgettes and little else was moving at the year-end except to retailers who were keeping their stocks at the bare subsistence level and filling in a few pieces here and a few pieces there.

Preparations for the print demand have been cautious. The larger houses have made elaborate efforts to achieve new and striking designs and their preparations have been fruitful in ideas and careful in merchandise. The wanted types are now either booked up through March or are in process of being booked up but little merchandise is going into work and to the dyers on hopes alone. Orders, advance orders, are the things that are wanted and the buyer places orders or he has small chance of getting the merchandise he wants. All of which raises the hopes that prints may really start to go in a bigger way later in the season.

In any event the only bath taken will be the bath the merchandise takes in the dyeing and finishing process. It is to be hoped that everything works out as well as the prints give promise of doing this coming season. There are good hopes that things will work out this way for whether large stocks are held generally is open to question. One thing is certain, production of broadsilks during October, November, and particularly December has been well below that of a year ago.

Outlook for 1927

Looking ahead into 1927 in a broad way, the outlook appears fairly bright. Silks are still the favored of fashion and it is not likely that any types of woolen or cotton will supplant silks in the regard of the consuming public. If such is to be the case there is certainly no sign of it now. The early spring lines of the dress houses employ silks almost exclusively with here and there some worsted crepe numbers to give variety. As to prices there is little to be asked for but prices are on a low and favorable basis. There is little risk other than the style angle to prevent either cutter or retailer from buying and using silks. Efforts were made to create more elaborate styles by designers last season and this movement is going forward for the current spring. Whether it will succeed is open to question. If it does succeed it should mean more silk per garment which is favorable and which may offset to some extent the small quantity of material the present abbreviated garb of the women demands.

If the move to complexity fails, then to make up for the severity of the models, it may be necessary to use heavier and richer materials. Something of this sort has already taken place as is evidenced by the increased demand for weighted goods. The weighted silks give a heavier piece of material while at the same time keeping down the quantity of raw silk used. If the price of raw silk falls still lower it would not be surprising to see mills increase the quantities of raw silk used and the weight also which would increase the richness and desirability of the merchandise.

All in all many factors incline towards optimism for the coming year, and not the least is the general feeling of caution brought about by the persistent decline in raw silk through all of 1926. Raw silk supplies are likely to be ample throughout the year and low in price with a moderate fluctuation. Demand in view of the satisfactory employment conditions in most sections should be large if not record breaking. In other words 1927 appears to be another year where management and prudence should pay the highest dividends.

Raw Silk Declines despite Record Consumption

Price Trend Is Downward Over Greater Part of Year—Yen Exchange Gets Back Close to Gold Parity—Japanese Attempts to Stabilize Yokohama Market Effected in November—Cantons Sell at Lowest in Ten Years

IN many respects the year 1926 was as trying a twelve-month period as the raw silk market has had to contend with since the war. Leaving out of our calculations the year 1920 which presented a debacle that probably will not be repeated in the lives of those now engaged in the importing of raw silk, the year just closed had as many confusing elements working in opposition to each other as anyone could desire. Silver exchange declined violently thereby affecting vitally the situation in Canton and Shanghai silk. Yen exchange on the other hand moved up to practically the gold parity which presented difficult problems for exporters of Japan silk. Lire exchange also had its baffling moments particularly when it recovered in the second half of the year and curtailed the exports of Italian grades.

To enumerate merely the movements in foreign exchange would be to tell only half the story. In the United States the consumption of raw silk for the 12 months exceeded slightly that of 1925 when a half million bales were taken by mills. In spite of this the trend of prices was definitely downward over the greater part of the year. At the close of the year not only were Canton silks selling at very low figures but Japan raw silk also was within striking distance of a $5.00 level. In the case of Cantons the low prices were partly the result of an opportune drop in silver exchange which lowered the cost in dollars of silk bought on the other side. With regard to Japans, however, there was an utterly different situation for yen exchange was moving higher over the greater part of the year.

Just how it has been possible to deflate the price of Japan raws at a time when a rising exchange was steadily increasing the cost and when consumption was averaging over 40,000 bales a month as against a previous record, prior to 1925, of 30,600 bales in 1924 will always remain something of a mystery. Nevertheless it has been accomplished and it has been accomplished without any extraordinary dislocation of trade conditions in the silk industry in the United States. A thoroughgoing deflation of prices for raw silk in Japan has made it possible. Without question the Japanese have borne the brunt of the loss as can readily be seen from the fact that the market level for Best No. 1/X was 2020 yen in January while in December it stood at 1420 yen. Here is a drop of nearly 40% in the space of 12 months. Japanese holdings of silk are always larger than the quantities held in this country so that the greatest losses have been suffered there.

Broadsilk mills have taken severe losses in many cases and a number of substantial concerns have found it expedient to liquidate but as a general thing the strong demand for silks of all kinds has enabled them to muddle through. As a matter of fact many will show a very fair profit and loss sheet as of Dec. 31. In the case of the hosiery mills, despite the falling raw market, they have enjoyed in nearly all cases one of the most prosperous years in their history. A tremendous demand for full fashioned silk hosiery has enabled them to sell up their production for months in advance and then actually benefit by the decline by reducing their costs for raw material.

Approach Workable Basis

Looking back upon the year just closed, two facts can be definitely set up on the credit side of the yearly balance sheet. The first is that the price decline has put all concerned, both in Japan and in the United States, just that much nearer to what should prove to be a stable and workable basis. The general trend of commodity prices in all countries that are on the gold standard has been slowly downward for several years. It was partly with this in mind that, in the TEXTILE WORLD Annual Review and Forecast Number of a year ago, a modifiedly bearish position was taken for the trend of prices during 1926. This has proved justified by the actual results but the decline in raw silks has amounted to about 40% as against a 10% to 15% drop in all commodity prices.

Grading Standards Important

The second item on the credit side is the final report of the Raw Silk Classification Committee which has been working under the auspices of the Silk Association for over two years. Quality and price go hand in hand as to ultimate importance to the consumer of silk in this country. What profiteth it a manufacturer if he buys his silk cheaper and then finds that the quality is below what he must have? What does he gain by buying a Grand XX 13/15 at $6.00 a pound—presumably the top grade — for weighted goods which absolutely require even silk, if he has hundreds of pieces returned because of glaringly apparent cross bars and streaks.

Because of the crying need for tremendously large quantities of very high grade 13/15 and 20/22 silk for use in the type of fabrics and hosiery that are wanted by the American public, that attainment of a real hard and fast grading standard is of primary importance. This at least furnishes something to work upon. Up to the present time, the efforts of a number of the largest houses have simply benefitted themselves at the expense of the

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vast majority of the trade. Just how this has happened will be set forth shortly but in the meantime it is well to point out that the most important part of the work of the Classification Committee remains to be done. This is to acquaint the Japanese reelers with the standard adopted and to try to have them reel their silk more carefully which will increase the quantities of Crack and Grand XX coming to this country.

Unless silk manufacturers are to suffer large losses through defective merchandise, it is absolutely essential that the quantities of real Crack and Grand XX be increased. Many medium sized mills are today weaving goods which are to be weighted. Any unevenness in size in the raw stock becomes accentuated by this process. It can be said that in very many cases the results are tragic. Goods that would pass muster as pure dye are utterly impossible weighted with losses that are only just beginning to be appreciated for the manufacturer who tempts Providence on the strength of a presumable Grand XX raw silk.

What is happening in the raw market is as follows. There are a number of the largest manufacturers who are testing and have been testing for some years every bale of silk that they buy. Their methods and standards are pretty much the same. From the importer's point of view, they represent the cream of the market and there is keen competition to sell them for the credit risk in most cases is negligible. In addition to the credit element, they buy very large quantities at a time and this seems to bulk large in the estimation of sellers who are trying to enhance their prestige by recording large import totals at the end of the year.

All this sums down to the fact that they get preferred treatment and are accorded privileges of rejection that they carry to an extreme that would be mirth-provoking if it were not tragic for the mills that get their rejections. They test and reject and test and reject until they manage to secure a considerable proportion of the really high grade silk that comes into the country. The silk that they have turned down is sold under the same grade to some manufacturer who has no facilities for testing and relies upon chop tickets and grades. Up to several months ago, this worked out fairly well but if weighting is to continue to be the factor it is at present, it will not work out in the future. A mill weaving goods for weighting purposes must above all have high grade silk.

Downward Price Tendency

Considering the trend of prices over the year, the downward trend is the feature that arouses primary interest. Very shortly after the first of the year, the market gave evidence of its intentions in this respect by moving off some 20c a pound for Japan grades. Buyers ended the year 1925 fairly well covered and business during the first half of January was light in the New York market. As broadsilks and hosiery continued to move well during this month and up till the end of February, the fabric market of itself gave no clue as to the drop that was to take place between the middle of February and the end of April.

Well informed observers of the situation, however, were not so confident as the majority of the trade as to the strength of the entire situation. Disquieting information as to the size of stocks of goods, particularly printed fabrics, began to be commented upon and this held back buying in February on the part of the larger houses and many hosiery mills who on general principles were working close to their requirements. The market turned downward in Yokohama and there was no real support in New York. The advancing trend to yen exchange at this time, while nominally increasing the cost of Japan silk, actually operated to bring about lower levels. In order to take a speculative position importers, who were mostly bullish on exchange, realized that they could only do this by covering their exchange in advance and holding off on their purchases of silk in the Yokohama and Kobe markets. The advancing exchange, moreover, would naturally hold the threat of deflation for general business in Japan which could not but affect the sentiment of the country and, more to the point, holders of raw silk. The stage was set for a decline in prices in Japan and events in the United States, where large stocks of printed goods were forced on the market, markedly aided this drop.

Importers through March and April pursued their policy of selling silk in the New York market at highly competitive prices, covering exchange and then only covering in part after the Yokohama market had declined to successively lower levels. This worked out pretty well for those who took this bearish position and carried it through. From a price of $7.20 for Crack XX 13/15 early in January, the market declined steadily until by the end of April the same grade could be bought below $5.80. These very low prices proved to be temporary, however, and below $6.00 per lb. for high grade 13/15's and 30c per lb. below this for 20/22's, heavy buying both for broadsilk and hosiery account made its appearance. In addition a very large short interest had been built up among the importers who did not all have either the inclination or the ability to cover all their sales somewhere near the low point.

Canton New Style 14/16 in the meantime had reached just about the lowest price in 10 years, dropping from $5.25 in January to $4.10 in May. Speculative buying of Cantons made its appearance and many manufacturers turned to Cantons for the fall season on the basis of the very low prices existing at the beginning of May. As mills continued to use fairly large quantities of silk and to put in new warps for the fall season the market strengthened and reversed its trend. A number of large hosiery mills are understood to have covered much of their requirements at this time for three or four months ahead and in some cases right up to the end of the year. Hosiery business was good and the operations of hosiery buyers together with the increasing quantities of silk which they were using have played a leading part in the trend of the market over the balance of 1926.

Upward Tendency

During May and June the market struggled upward, finding considerable resistance from broadsilk mills who were experiencing sharp competition on all sides due to the large quantities of print goods hanging over the market but having the support of a tremendous consumption on the part of hosiery mills. It is estimated that the hosiery trade during the second half of 1926 actually was taking more than 50% of the raw silk consumed in this country. Just how accurate such an estimate is, is naturally open to question for no figures are available to substantiate this conclusion. In support of it there is the individual experience of large importers who sell both to broadsilk manufacturers and to hosiery. There are also the careful estimates of market observers whose views are based in all cases on more than mere guesswork.

By the start of the new season prices had recovered to the basis of $6.50 for Crack XX 13/15 and warp sizes also had recovered to a closer relationship with the 13/15 silk. Reports that the spring cocoon crop would show a decrease from the previous year had something to do with the strength shown in June but there was also the undoubted fact that business in broadsilks was going ahead for fall in a more confident way. A strong call for weighted goods forced the production of additional quantities of merchandise and as noted before the hosiery trade was using the largest quantities of silk in their history.

In July the market felt the weight of heavy arrivals of new season silk in Yokohama which caused an easier tendency. Canton 14/16 silk also had advanced strongly and with Canton crepes wanted badly by the cutting up trade mills went over to the weaving of this type of material. New Style 14/16 Canton advanced to $5.00 per lb. on the strength of this revival of interest. Further irregularity developed in Japan silk in August and Cantons which had held rather firmly due to the large use on the part of mills here in July also showed an easier tendency. Later on, as the fall season drew to a close and mills realized that as far as fall goods were concerned they were going out of the season in a strong position, renewed inquiry developed which raised prices in September to the highest since the market turned downward in February. Cracks moved up to $6.70 and warp-sizes to $6.50.

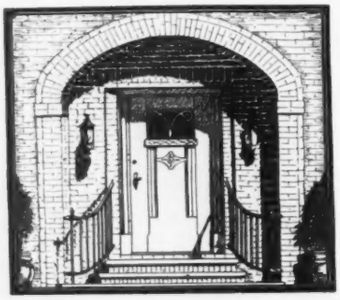
Over the final three months of the year the market turned weak again. Broadsilk mills cut down on their operations due to poor business and keen competition which did not permit them to pay current prices for raw and continue to make up merchandise. The presence of sizable stocks of pure dye fabrics that had to be moved at concessions due to buyer preference for weighted goods, assumed the proportions of a problem. Hosiery concerns, while using large quantities of raw, appeared to have bought this some time earlier so that their buying had little effect on the movement of prices.

By the middle of November the declines had reached proportions that began to arouse serious concern in the minds of the Japanese who had contracted for their cocoons and who were faced with the necessity of selling below cost over the balance of the crop year. Since this meant the major part of the entire 12 months, they naturally considered the advisability of checking the decline, if possible. The pressure of the raw silk interests in Japan forced the Government to agree to a proposal to withdraw a quantity of silk from the market. This was financed by Government advances in the form of a loan to the owners of the silk. This was made available to the Imperial Silk Warehouse Company through the Yokohama Specie Bank acting as agent for the Bank of Japan. The first amount authorized was 22,500,000 yen but this was subsequently increased to 37,500,000 yen when it became apparent that the first amount would not be sufficient. Against each picul bale taken over, there was loaned 1350 yen as against a ruling market price of 1420 yen for Best No. 1/X. Such a high loan valuation could be taken to indicate the confidence of the Government in the then existing level of prices. With some 25,000 bales of silk withdrawn from the market in Yokohama and Kobe, prices turned stronger and in December moderate strength was noted, Best No. 1/X advancing to 1480 yen as compared with a low of 1420 yen. Prior to the New Year holidays the market maintained its firmer trend.

Situation in Cantons

In the meantime Canton silk for several months had been dropping steadily with the only buying of consequence that of importers and dealers who were willing to speculate on an ultimate revival of interest on the part of consumers. This type of buying did nothing more than stay the drop from time to time and, lacking any real use for the 14/16 and 20/22 Canton, the basis of any permanent improvement was entirely lacking. First at the $4.30 level, then again at $4.10, and finally at $4.00, dealers operated but there was nothing to hold the market once the effect of their buying had subsided. By the close of the year this grade had fallen under $4.00 per lb., with the likelihood of further declines before the drop was finally stayed.

In connection with Cantons, two important factors have combined to bring them down to their present lowly status. The first has been the steady



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lowering of quality at a time when even better quality was needed. First one and then another large manufacturer has turned from them in disgust as he saw his goods returned because of large slugs and nibs which were difficult to entirely break out in the throwing. Even with special cleaners and an entirely new cleaning process at a large additional cost, it has not been possible to get most of the major cleanness defects out. The caution with which manufacturers have gone ahead with plans for a print season has also cut down the use of Cantons by broadsilk mills.

Second in importance to the quality angle has been the switch on the part of cotton mills to rayon for use in fancies. Formerly Canton 20/22 and 22/26 was used in large quantities in cotton shirtings with silk stripes, but rayon has taken its place almost entirely in recent years. This has been a severe blow to reelers in the Canton market who have had one of their best customers cut down their use of Canton silk by 50%. The relative cheapness of Cantons at the present time, however, is centering attention on them and it would not be surprising to see many mills switch to them again this spring.

Disturbed conditions in China are holding some manufacturers back, for an interruption of supplies due to civil war would be a severe blow. Having once planned and initiated production of a number using Canton silk, it is a costly matter to have to switch. If the present disturbances in the Canton district increase in intensity, shipments of silk would unquestionably be curtailed if not stopped altogether.

Looking at the year 1926 in retrospect, we are impressed first of all with the utter absence of any inflationary tendencies. Actually, deflation both in Japan and the United States has proceeded steadily. While definite figures are not available to measure this movement in Japan, it must have been substantial. This conclusion is based on the return of the yen exchange to the gold parity which must bring deflation inevitably in its wake, and upon the action of the raw silk market which at the close of the year was hanging around the lowest levels in ten years.

Outlook for 1927

Looking forward into 1927, we must first take cognizance of the fact that deflation, according to well informed opinion, is not fully completed. It is probable that in Japan, at least, the trade and financial situation may be further complicated before a stable basis has been reached. As there is nothing in the situation in the United States to offset the unfavorable aspect in Japan, we must conclude that over the first half of the year additional declines are in prospect. In the United States there appear to be ample stocks of piece goods and hosiery while in both countries there is no lack of raw silk.

Comparing the situation with a year ago, we find that there are many important differences to be taken into account. A year ago we had a rather high level of raw silk prices, a strong statistical position for raw silk, and an overextended and top-heavy situation in broadsilks. At the present we find that raw silk prices have been pretty well liquidated, and that the fabric market likewise is in a stronger position. On the other hand the position of raw silk itself does not seem so secure with stocks in both countries larger and the Japanese industry in particular weakened financially by the protracted decline during 1926. In addition the trend of prices has been downward and appears to be still headed lower.

It is probable that on the basis of a somewhat lower level, the market should stabilize itself. We look for this to happen during the first half of 1927. Speculative buying based on the possibility of a reduced crop for 1927-28 due to low prices for cocoons, plus the certainty that lower prices for raw silk will stimulate consumption in the United States, should check the downward tendency in the early months of the present year.

Spun Silk Has Disappointing Year

Combination of High Waste Silk Costs and Reduced Demand Proves a Difficult Barrier—Prices Decline

A COMBINATION of high waste silk costs and a reduced demand proved a difficult barrier for domestic producers of spun silk to surmount last year. Briefly stated, the year 1926 which opened with such high hopes of continued good business and adequate profits proved to be a disappointment. Probably certain spinners felt the depression more severely than others depending on their foresight and the energy with which they went after sales, but certainly for the industry as a whole there was no such period of activity as was witnessed during 1925.

In one or two directions, notably for use in tie silks, spinners have enjoyed a demand that was fully up to the previous year. Unfortunately the industries that continued to operate at anywhere near a normal level were the exception. The problem of a reduced use of spun silk has been the heaviest cross that the domestic trade has had to bear. At the same time the continued and unexplainable maintenance of a high level for waste silk over the greater part of the year has added greatly to their difficulties. Holders of waste silk such as Kikai Kibizzos, pierced cocoons, and various grades of Canton waste have obstinately held to the prices in the face of a very slack demand from this country. This persistence was worthy of a better cause, for as prices for yarns in this country dropped, it became not only difficult but impossible for spinners to pay the absurdly high quotations asked.

It was only in the closing days of the year that waste prices came down at all from the levels maintained during the spring and summer. This means that over the greater part of the 12 months, producers have been working on high priced waste and selling on a declining market. Since waste comes as a general rule via the Panama Canal which takes much longer than the overland route either for slow freight or silk train, and even when it arrives here takes many months to process, it is rather clearly evident that spinners will not begin to benefit from the moderate drop in prices, that occurred late in 1926, until 1927 is nearly half over.

Were it not for the fact that their principal markets went dead on them, it is likely that the waste silk costs could have been accepted with equanimity. The hardest blow of all to the spinners was when the broadcloths went absolutely flat in the early spring. This fabric had been the backbone of the entire market during the year 1925 and it was due to the extremely active demand for plain and striped broadcloths that spinners were able to do so well in this year. During the fall of 1925 very large quantities had been made up and carried into stock by the larger houses that specialized on this number in anticipation of the spring demand of 1926.

Believing in the fabric which had proved so profitable during the previous year, manufacturers covered themselves for the first months of 1926 in the 60-2 yarns. During the months of January and February there was no cessation in buying on the part of cutters and retail stores. Though it would be still some months before the stores could hope to move the goods over the counter they were buying for later deliveries which seemed at the time a safe investment. Unfortunately, as it turned out later, all were anticipating. The demand which should have come in the months of March through June was entirely filled by the operations of buyers in the first two months of the year. The market struck a snag and stopped abruptly. Broadcloths were not wanted and over the balance of the year have been very quiet. To say that they have been very quiet is putting it mildly. Actually they have not moved at all.

The sudden cessation of buying in broadcloths was not an isolated phenomenon in the range of fabrics woven from spun silk. The entire silk trade fell into a rut about this time and it is simply unfortunate that spun silk, having a somewhat less diversified field of use, felt the situation in a more serious way than the average member of the silk trade at this time. The price of spun yarns is an index of the lack of demand. Though waste grades in the primary markets showed only the most nominal decline, spinners were forced to cut their prices rather drastically.

Due to the strong demand for broadcloths, two ply yarns had risen proportionately higher than singles. For this reason the drop in the ply yarns was somewhat greater. Beginning the year on the basis of $6.25 a pound—$6.40 was the ruling quotation a month or so earlier—the market sagged steadily until the ply yarns could be bought as low as $5.60. Large contracts might have been put through on a slightly lower basis but this is a representative market price. Singles in successive stages dropped from $5.00 a pound in January to $4.50 in May. This proved to be the bottom for the time being.

An improved tone to the general situation in silk gave spinners some hopes in June and as a matter of fact business improved for several months. While the broadcloths continued to all intents and purposes dead as a doornail, other materials noted some better demand which strengthened the spun silk market and gave the producers hopes that a turn had come. Prices were advanced slightly to the basis of $5.75 for 60-2 and $4.60 for the singles.

Somewhat better buying was noted at this time for 62-1 for use in tie silks and tub silks. The satins came in as a fall material and some crepe twists and ordinary singles were used which served to justify the small advance in price asked. These conditions continued through the fall months with some courageous manufacturers putting into work some broadcloths despite the fact that it was common knowledge that the larger makers of this type of goods had carried over a fairly substantial stock from the previous season.

The Schappe Situation

Through the year various factors had operated to curtail the competition from schappe, imported from the Continent. In the first place the schappe producers had the same factors of high costs to contend with that the Americans had. Second, while exchange was still falling early in the year, buyers here had no enthusiasm to purchase regardless of the enticing quotations made. When business did pick up somewhat in the second half of the year, rates for franc and lire exchange showed strong recoveries which meant quotations for schappe that were actually higher than spun silk. For several months foreign spinners appeared to temporize in the hope that exchange rates would resume their downward trend. When it became evident that both the franc and the lire had been pegged, the year was practically at an end.

In December, however, they tossed a bombshell into the camp of the American spinners by sharply slashing their prices to a level that was well below the domestic level. This forced the American spinners to reduce their prices to correspond so that the year ended in a merry whirl of price cutting. The final level of quotations for domestic yarns was

$5.25 for 60-2 and $4.30 for 62-1. This represents a decline of $1.00 a pound in the ply yarns and 70c a pound in the singles during the year.

Prices at Minimum

It is the opinion of men in the trade that the present quotations represent about the minimum. Certainly it is difficult to see how their quotations can be made much lower. It is interesting to note also that in the last eight or ten years, on only two occasions have prices been lower than at the end of 1926. One time, was in 1921 when the worst of the post-war depression had brought prices of all descriptions to very low levels, while the other time was in the middle of 1924 when the trade was experiencing the full effects of the debacle that resulted from the Japanese earthquake. At neither time were prices but slightly below present levels and it might be significant that the subsequent rally was both quick and substantial.

At the moment, producers and those handling spun silk are making no predictions but one and all feel that the low basis on which spun silk is selling should have a marked effect on demand during the coming year. It would seem to be unfortunate that spun silk as a whole should appear to be so bound up in the fortunes of a style fabric such as broadcloth which can go out of fashion almost overnight. That this condition exists makes it evident that prosperity for the industry at any time rests on a rather insecure foundation. Needless to say the leading firms are leaving no stone unturned to discover new uses and fabrics although up to now they seem to have met with little success in developing new ideas. It is to be hoped that 1927 will tell a different story.

British Rayon Prospects Reasonably Good

Coal Strike Hampered Progress in 1926 to Some Extent, but Outlook Is for Expansion—Details of New Producing Companies—Increasing Demand for Acetate Yarn—New Process for Strengthening Rayon Yarn Reported—Price Reductions Not so Acute as in America

From Our British Rayon Correspondent

WHEN writing a short review of the British Rayon Industry for the Rayon Supplement issued by TEXTILE WORLD last October the trade was suffering from the effects of the great coal strike. Nevertheless, whatever the loss occasioned by this lamentable stoppage must have been to the heavy industries, the rayon trade suffered in a smaller way only. Increased costs of production were inevitable and a decreased purchasing power on the part of the buying public was obvious. At the time of the commencement of the strike, the rayon industry had every hope of a prolonged period of prosperity but in the three months ending June 30, production of rayon yarn was actually less than in the first three months of the year. In July, after the price reduction had taken effect both in this country and in the United States, production increased. The total amount of yarn subjected by the Government Authorities to excise duty during the third quarter of the year amounted to 6,722,074 lbs. against 5,951,953 lbs. and 6,081,395 lbs. in the second and first quarters of the year respectively.

The import of rayon yarn from the Continent has increased rapidly but it must be borne in mind that in the early part of the year the trade was still suffering from the excessive quantities "dumped" here prior to the imposition of the duties in 1925. Still more interesting, however, is the steady decline in the average value per lb. During 1925 this average was 5.32 shillings per lb., and it will be seen from the following table that this has gradually fallen to 3.49 shillings per lb.

Imports of Rayon Yarn Into Britain 1926

Period	Yarn in Lbs.	Average Value per lb. Shillings
Jan.-March	392,286	4.88
April-June	540,120	4.29
July-Sept.	596,502	3.78
Oct.-Nov.	623,230	3.49

Details of the sources of the imports are not yet complete, but it is known that Italy sent 459,518 lbs. in the first eight months of 1926. Owing to the imposition of the duties in July, 1925, a comparison with that year is quite impossible.

Exports of Manufactures

Imports of manufactured goods have slightly declined throughout 1926 and on turning to the export side of the account we find that there has been a slight falling off in yarns but a considerable improvement in manufactured goods since the beginning of the year. It is interesting to note that while prices of yarn imported into this country have fallen considerably, the reduction in the price of exported yarn has not been proportionate. In 1925 the average price paid by our customers for rayon yarn was 6.39 shillings per lb. In the first quarter of the year under review, this figure fell to 5.99 shillings and in the second quarter rose again to 6.18 shillings. Following the price cut in July, a further fall to 5.50 shillings took place and this is the present average price obtained for yarn exported from this country.

Manufactured goods include cotton and rayon mixture piece goods and the development in this latter section of the trade has been remarkable, the total exports for the first 11 months of 1926 amounting to 55,500,000 sq. yds. and this in addition to the large and growing home trade gives some indication of the increasing use of rayon by the Lancashire cotton manufacturers. There are indications, however, that still greater developments are in store, as at the present time only a few firms are really going "full out" for rayon goods. When the cotton industry itself improves it is generally thought that a great impetus will be given to the trade in rayon mixtures, though the low price of cotton will be tempting to buyers if the price of rayon yarn is not reduced.

In this latter connection, events may move rapidly and there is little warning here of any impending reduction. However, when the "cut" took place in the United States in November, Courtaulds announced that no similar reduction would be made here. Nevertheless, it is known that a reduction in the warping process costs has been effected and that in due course certain users will benefit even though no general price fall can be seen at present.

Exports of cotton and rayon mixtures to some of the more important markets are given in detail in the following table, showing the totals for the first six and for eleven months of 1926.

Destination	Jan.-June 1926 Sq. Yards	Jan.-Nov. 1926 Sq. Yards
India	8,148,479	17,404,470
Canada	2,242,726	4,101,413
Australia	1,521,252	3,326,347
Dutch East Indies	1,294,895	2,606,100
Egypt	1,138,962	2,040,052

Producing Companies

The progress of the many new rayon producing companies formed in 1925 has been watched throughout the year with great interest and a brief summary of the present position in regard to each is given herewith.

Apex Artificial Silk Co.—This company intends to produce acetate silk but owing to delays caused by the coal strike, actual spinning operations have not yet commenced though cellulose acetate is being produced on a limited commercial scale. The factory is being built at Edmonton near to London and the direction of the company is largely in the hands of the well-known Manchester raincoat firm of Cohen and Wilks, Ltd. It is hoped to produce 10 tons per week by the end of 1927.

British Visada, Ltd.—The subscription lists for this company, which was formed in the latter half of 1925, were closed very soon owing to the desire of the investing public to obtain shares. While the same enthusiasm has not been shown during this year, the company still enjoys good support owing to the high standing of the board in the textile industries. The chairman is Sir Edwin Stockton; the vice-chairman, Sir Henry Whitehead of Salts, Ltd. of Saltaire, and other directors include Sir Percy Woodhouse, the president of the Manchester Chamber of Commerce. The plant is at Littleborough and although the actual opening took place some months ago, only a limited amount of yarn is being sold commercially and is being consumed by the firm's own connections. S. S. Napper, formerly works chemist for Courtaulds, Ltd., is joining the company in January and after that considerable developments are likely.

Bulmer Rayon Co.—This company is a subsidiary of Smith, Bulmer & Co., worsted manufacturers, of Yorkshire and is now producing both nitrocellulose and viscose yarns. The capapacity of the plant now running, on the basis of 200 denier, is 10 tons per week, but lower deniers are in some cases being made. It is anticipated that 30 tons per week will be produced by September, 1927.

Kirklees Manufacturing Co.—This company is producing a good grade viscose silk at Bury in Lancashire but only on a small scale. An output of about 5,000 lbs. per week is expected shortly but this will be again increased.

Nuera Art-Silk Co.—While this company's shares were at one time among the most neglected in the rayon group, a few months ago a very big fillip was given to them. A new process for the strengthening of rayon is said to have been discovered by the company and, further, Courtaulds, Ltd., are reported to have taken an interest in the working. No statement whatever has been issued by the company but it is known that, though laboratory tests have been successful, there will be considerable delay before full scale commercial tests can be made. According to a correspondent of the *Manchester Guardian Commercial* who has obtained information from a reliable source, the process concerns the tensile strength of the fiber in both the wet and the dry state. Should it prove successful, the wet tenacity of rayon will be equal to the present dry strength. A further claim is that the washing properties of the treated fiber will approximate those of cotton, even to the extent of boiling. It is also said that the unsightly wrinkle of some rayon hose will be eliminated as this fiber will not "elongate."

The Nuera factory is being built at St. Helens in Lancashire but commercial production will not commence before February, 1927, at the earliest.

Rayon Mfg. Co.—After many delays this company has now opened its factory at Ashstead in Surrey and is producing about one ton per day. The chairman of one of the largest London stores is also chairman of this company.

Raysheen, Ltd.—This is a company

which is erecting a factory in Northern Ireland but no intimation has been received as to whether production has commenced. As the company was not floated until early this year, it is probable that present output is very limited.

Western Viscose Co. has opened its factory at Bristol and is intending to concentrate on 150 denier. The plant being installed is capable of producing 12 tons per week but present output is said to be only one-half ton per day though no doubt this is being rapidly increased.

One of the pleasing features of the latter half of the year has been the increased demand for acetate yarns and British Celanese Ltd. is booked up with orders for many weeks ahead. In the meanwhile considerable quantities are being imported mainly from France. Tubular filament rayon has also increased in popularity and at the textile exhibition held in Leicester in the fall of last year, some excellent motor rugs made from Celta tubular silk were shown by Kemil Ltd., the manufacturers in this country. It is said that this firm's plant at Peterboro is being extended.

During the year the large plant of the British Enka Artificial Silk Co. has been opened at Liverpool. Present production is about 4,500 lbs. per day, but this will be quadrupled before the fall of next year. The company is a subsidiary of the well known Dutch Enka of Arnheim, Holland.

Interest has recently been shown in some dull luster yarns which have been produced by Harbens, Ltd. of Golborne. The control of the luster is effected in the finishing processes but the yarn is received by the manufacturer in the dull state. The processing is said to be simplified and an excellent control of the luster, allowing for spotted effects if desired, is obtained. Courtaulds are also making this yarn.

There have been few startling developments on the mechanical or technical sides of the industry other than the Nuera process already referred to. Machinery for British Visada, Western Viscose and Raysheen is being supplied by Dobson and Barlow Ltd., of Bolton and that for the Rayon Mfg. Co. by Oscar Kohorn and Co., of Chemnitz. As the plants are starting at the same time, a good deal of competitive interest will be shown. Kohorn's machinery for the British Empire is now largely made at Hetherington's textile machinery works in Manchester.

Future Prospects

The prospects for the industry in 1927 are therefore reasonably good. Prices have been maintained possibly better in this country than in any other, and where reductions have been made, they have not been caused by undue competition from abroad but rather from a desire to further stimulate demand. With the prospect of improving conditions in the textile industries, especially cotton, a bigger demand for rayon will inevitably come both from home and abroad. Courtaulds have pursued their policy of establishing factories in the various consuming countries and considerable progress has been made in France, Canada, India and Germany. In the last case, the plant is being built jointly with the Glanzstoff group.

The export trade from this country to China, India and the East has not increased as rapidly as has Italy's but it is known that the latter country has offered exceptionally low prices and other inducements. It is probably not worth while for this country to enter into cut throat competition for a section of this trade, more especially in view of the rise in production of rayon in Japan. This latter country may well become the premier supplier to both China and India of medium denier rayon in a few years time. Competition is also acute in Central and South America but here England is making a bigger effort, and not without success.

European Rayon Trade Expands but Profit Less

Price Reductions Affect All Countries—Germany Takes Steps to Meet Outside Competition—Dutch Industry Reflects Advantage of Quality Policy—Italy Recovers After Sharp Depression in Early Part of Year—Details of Developments in Other Countries

Special to TEXTILE WORLD

THE trade in rayon of the various countries of Europe exclusive of Great Britain (which is treated separately in this issue) has been better so far as actual weight of yarn is concerned than in the previous year. It is unlikely however, that the increased sales have made up for the loss of profit necessarily incurred by the big price reductions which have been effected in every country without exception.

France

The fall in the value of the franc which was a conspicuous feature of the year 1926 has undoubtedly stimulated the export trade and perforce acted in some manner as a restraint on the imports. Exports of rayon yarn into France in the first 10 months of 1926 amounted to 875 tons against 496 tons in 1925. Imports of yarn totalled in the same period 877 tons in 1926, 766 tons in 1925 and 1,470 tons in 1924. The chief sources of supply are Belgium and Italy. Rayon fabrics have been exported in increasing quantities, the total for the first 8 months of 1926 amounting to 230,193,000 francs, against 178,211,000 francs in 1925. Imports have also slightly increased from 14,703,000 francs in the first 8 months of 1925 to 18,476,000 francs in 1926. Switzerland is the most important exporter to France.

It is not yet possible to give with any degree of accuracy an estimate of the French production in 1926, but in 1925 reliable figures show that the total output was about 7,000,000 kilos (or about 15,400,000 lbs.). A considerable extension has taken place in productive capacity including the Calais plant of Courtaulds, Ltd., the great British firm. Several capital increases have taken place with a view to further extensions and the capital of the Soieries de Strassbourg, now in working agreement with Courtaulds' French plant, has been raised to 25,000,000 francs.

On the whole the companies showed good profits when the last accounts were made up. Several foreign concerns in addition to Courtaulds and Tubize have established themselves in France and competition is keen. The large group known as the Comptoir des Textiles Artificiels, representing the home producers, have made a reduction in prices to meet the competition of the other companies entering France.

Belgium

Exports of rayon from Belgium amounted to 2,268 tons in the first nine months of 1926 against 2,470 tons in 1925. The chief market in the latter year was Germany, followed by France and Italy, but in 1926 the order was reversed, the main market being France, the second and third positions being held by Germany and Italy, respectively. Exports to the United States totalled 178 tons against 166 tons.

Imports increased from 87 tons to 308 tons, the most important source of supply in the latter year being Italy, which sent 188 tons to Belgium in 1926 against only 25 tons in 1925. French exports to Belgium increased from 31 tons to 65 tons.

The Belgian industry is passing through a rather severe time as competition from other nations and within the country's own borders, is very keen, with the result that prices have fallen materially.

Germany

Exports from Germany in the first 10 months of 1926 amounted to 3,033 tons against 3,288 tons in 1925, while imports which totalled 1,866 tons in the same period of 1925, reached 2,952 tons in 1926. The October figures show that exports are below the average for the year and that imports are considerably higher. Fifty per cent. of the imports came from Italy while about 25% of the exports went to the United States.

The industry has met with severe competition from Italian producers and as a defense against this a convention agreement was formed among the leading home producers whereby special terms were offered to customers buying a large percentage of yarn from German firms. This convention has also been endeavoring to tackle the vexed problem of standardization and has drawn up a list of grades. Prices have been maintained quite well and so far at least the objects of the convention appear to have been achieved. A somewhat heated dispute has taken place with Italian producers in regard to certain patent rights, but this has now been settled by an agreement under which the Italian firm agrees to pay a license on conditions that the Germans waive the objection to importations.

Up till the month of August exports from Germany slightly exceeded those of the previous year, but since that time a falling off has occurred, due in part to smaller sales to the United States. The industry is doing moderately well, however, and considerable progress is being made by such specialty firms as J. P. Bemberg Co., who, despite the duties, are making considerable headway in the United Kingdom. The starting of the Tennessee plant will result in a reduced exportation to the United States, however beneficial the move may be to the company as a whole. While Italy competes with German producers mostly in the lower grades, a considerable quantity of better class fiber is imported from Belgium. An agitation has been on foot for some time to have the import duties raised.

Holland

The Dutch rayon industry has been fully justified in its policy of putting quality first. Exports of yarn have increased from 2,624 tons in the first 11 months of 1925 to 4,787 tons in 1926. Imports are a comparatively negligible factor. Production is largely in the hands of the Enka and Breda concerns, both of which have established an enviable reputation for quality of output. Breda has recently introduced a new yarn for which it is claimed that tenacity in the wet state has been increased by 20%.

The Enka company's profits for the first half of 1926 have been estimated at 1,500,000 florins and as it is anticipated that the returns for the whole year will be approximately double this amount, the serious in-

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roads into profits made by the price reductions may be seen. Last year profits amounted to 5,920,000 florins and in 1924 to 6,270,000 florins. It is estimated that the productive capacity of this firm and its various foreign subsidiaries will amount to 10,600,000 lbs. at the end of 1926 against 5,000,000 in 1925.

Italy

The Italian industry passed through a severe depression in the first few months of 1926, but since then a considerable improvement has taken place and exports for the first 10 months of the year have reached 7,379 tons against 6,657 tons in 1925. The comparison with the year 1925 is however made more difficult on account of the imposition of the English duties on July 1, 1925, which resulted in Italy sending to Britain only 53,932 lbs. in the second half of the year against 5,121,278 lbs. in the first half. In order therefore to give a clearer indication of the position, the following tables have been prepared and in these, exports to Britain have been entirely ignored.

Destination	Italian Exports each year 1926-Kilos.	First Six Months in 1925-Kilos
Austria	133,901	163,984
France	56,903	138,265
Belgium	116,650	12,439
Germany	302,504	276,334
Spain	285,735	148,416
Switzerland	156,384	235,471
China	628,536	131,537
Japan	368,602	18,020
India	443,806	197,575
Argentine	86,840	88,416
United States	395,273	701,203
Other Countries	399,386	259,223
Total (ex Britain)	3,374,520	2,370,883

During the two months of July and August, exports to Germany, Japan, India, Austria and Great Britain increased. Sales to Switzerland remained fairly steady while China, Spain and the United States fell off. During September, Germany became the chief market for Italian rayon followed in order by China, India, United States and Japan.

Details of the destinations of exports during the later months of the year are not complete but it would appear that if the British market be entirely ignored on account of the fluctuation occasioned by the duties, Italy is sending about 40% more rayon to markets exclusive of Britain than she was in 1925. This figure therefore represents the inroads made by the Italian manufacturers into European and more particularly Asiatic markets.

During the year a financial consolidation has been effected in the Snia Viscosa concern and in order to reduce the high rate of interest paid in Italy for loans necessary for working capital, the company has raised a 87,000,000 debenture loan abroad. Progress has been maintained in the production plans of the company since the revival in the summer of 1926.

The financial boom of 1925, which occurred not only in Italy but in almost all rayon producing countries, has not been repeated and there have been few, if any, new companies formed. The Soc. Anon. Meridionale Seta Artificiale, one of the companies forming the Viscosa group, is increasing its capital from 50,000,000 to 75,000,000 lire, thus raising the total capital invested in this group, of which full particulars were given in the Annual Rayon Issue of TEXTILE WORLD in October, to £235,000,000.

The industry has had to make very big reductions in prices but notwithstanding this, it is understood that a profit of over £50,000,000 was made by the Snia Viscosa Co., in the first seven months of 1926. The industry suffers from the fact that it is to an increasing extent dependent upon the export trade and as a consequence changes in tariffs, the whims of fashion and the increasing productive capacity of competitors result in constant changes in the direction of exports and a ceaseless search for new markets. As an indication of this tendency the following table is interesting.

	Italian Exports of Rayon 1st. Half 1926 Kilos	1st. Half 1925 Kilos
Europe	1,213,293	2,755,814
Asia	1,440,944	347,132
America	510,530	823,850

With an improvement in the general conditions of the older branches of the textile industries, it is hoped that the present renewed prosperity in the Italian rayon industry will become a market feature of the year 1927 and while profits cannot be on the high level of 1924 and 1925 a reasonable era of prosperity may be anticipated although some of the companies appear to be paying high rates of interest for working capital which may offset some of the advantages obtained in cheap power and labor.

The same factors of uncertainty which affected the domestic rayon market in 1926 were noticeable in the development of the industry in countries abroad. Thus we find that, whereas production increased in other nations just as it did here, profits were reduced owing to the price adjustments which were practically universal.

The accompanying article considers the situation in each of the countries of Europe, exclusive of Great Britain which is discussed in a separate article in this issue.

Spain

Spain has not in the past ranked high among countries producing rayon yarn but the market has been assiduously worked by Britain and Italy. Further efforts are now being made to increase the productive capacity of the industry in the country in order to obtain some of the benefits now enjoyed by importers and it is reported that a Franco-Spanish consortium is planning to erect a factory with an output of 600 tons per year. Present companies include S. A. de Fibras Artificiales; Fabric de Seda Artificial de Valdenoceda and Seda de Barcelona, the latter being a subsidiary of the Dutch Breda Co.

Sweden

Little is known of any production of rayon in Sweden except that one company, Aktiebolaget Svenskt Konstsilke, is producing over 100,000 kilos, per annum. A United States consular report however states that a group of industrialists is planning another plant while the present Swedish company is said to be negotiating with the Viscose Suisse in regard to an increase in capital for extensions. No decision has apparently been come to, however.

Switzerland

The Swiss rayon industry is a very important one but the increasing tariffs are to some extent hindering its development by the restrictions placed on imports to other countries. The Swiss manufacturers have earned a high reputation as producers not only of yarn but also of finished goods and in ribbons and embroidery they have been pre-eminent. One of the most important companies is the Viscose Suisse who make the well-known Emmenbrucke silk. Feldmuehle, Ltd., had an interesting display of their products at the textile exhibition held at Leicester, Eng. in October last.

Greece

It is understood that S. A. de Soie Artificielle of Athens is planning the erection of a factory to produce about one ton per day. The company is financed by French and Greek capital and the machinery will be largely German.

Hungary

There are two producing companies in Hungary and the latest information is to the effect that competition from Italy is intensely keen.

Poland

Latest information from Poland is to the effect that the British coal strike had caused a general increase in trade which had benefited the artificial silk industry. The Tomaszow factory, which is largely financed by Snia now that Tubize have sold their interest, is producing 4,000 kilos. per day of both nitrocellulose and viscose. It is hoped to increase the production of the latter to 10,000 kilos. per day.

Russia

The Soviet Government is now encouraging the production of rayon but only one plant is working with an output of about 14,000 kilos. per month. A combination of French and Czecho-Slovakian industrialists is planning another factory near Moscow with a capacity of about 2,000,000 lbs. per annum. Information is exceedingly difficult to obtain and usually comes by very roundabout ways.

Roumania

The peculiarities of the Roumanian laws are against enterprise and so far no definite information has come to hand as to any producing companies. It is reported that negotiations have been opened with Italian and Czecho-Slovakian firms with the object of establishing the industry however and a report has been received of the erection of a factory to produce about 5 tons per day.

Norway

A factory is proposed in Norway but the scanty population would necessitate dependence upon the export trade and for this reason, despite the obvious advantages enjoyed in the large supplies of raw material, progress is very slow.

Czecho-Slovakia

A report received from the Anglo-Austrian Bank states that Czecho-Slovak factories have found it possible to sell their products at prices which make it the cheapest in the world. While this is true, the reason given by the Bank, viz. the increased export trade with Great Britain, is probably not now true on account of restrictions set up by the British customs duties. It is not impossible that the producing countries obtain an advantage in the supplies of woodpulp within the country's own borders but in any case the margin of profit received must be very small. There are four plants and another, financed by Belgian capital, is reported as about to be built. Imports in the first four months of 1926 were less than in 1925 but exports were proportionately worse, largely on account of the loss of the British market.

Denmark

It is reported that a rayon plant to produce 300 kilos per day is to be erected at Copenhagen. The machinery will come from Chemnitz.

Finland

An excellent supply of raw materials is doubtless the cause of a movement made to establish a rayon plant in Finland but there is little likelihood of any further developments in the near future.

Austria

Later reports state that there is an increasing demand for rayon goods in Austria. A constant effort is being made to persuade the Government to raise the tariff and it is understood that this is meeting with some success and that raw yarn will in future be subjected to duty whereas it was previously admitted free. It is also proposed to increase the duty on dyed yarns, etc.

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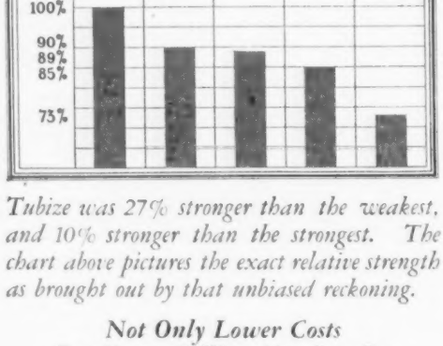

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Price Cuts Make Rayon Cheaper Than in 1913

Year 1926 Marked by Readjustment—Quotations Lowered July 1 and Again in December—Insistence on Quality Becomes More Pronounced—Viscose Type Yarn Notes Most Severe Competition—Fact That Consumption Increased Is Demonstration of Strength of Its Position

FOR the first time in several years the production of rayon appeared to overbalance the large and steadily growing demand. There is no question that the use of rayon increased last year despite the fact that generally speaking conditions in textiles were far from satisfactory. Production of rayon on the other hand appears to have grown still faster due to the many new projects initiated in the boom year of 1925 and the efforts of the established concerns to increase their facilities in order to keep pace with the apparently insatiable demand for this newest of textile fibers.

In addition imports of rayon began to increase steadily following the trend that first began to be noted in the second half of 1925. Actually, imports increased all during the year 1925 but it was not until the second half of the year that they began to assume proportions that aroused real concern in the minds of the larger American firms. In November and December of 1925 the import figure totalled 2,000,000 lbs., the largest two month total for all time. This was at the rate of 1,000,000 lbs. a month and the seriousness of the situation had a two sided character.

First, there was the actual competition from such large quantities coming into the country and taking the place of domestic yarns. No small item was this at the rate of 1,000,000 lbs. a month or 12,000,000 lbs. a year. Compare it with the entire year's imports in 1924 which amounted to 1,700,000 lbs. and it is easy to realize that the additional 10,000,000 lbs. was a considerable item even in a market that was growing without any apparent cessation. Second, there was the direction or the trend of the import figure to consider. This had been in direction of larger imports and with conditions as they were in the European markets there was every reason to believe that larger and larger quantities would be brought in to compete with the domestic fiber unless drastic steps were taken to prevent it.

To what degree it was the imported yarn and to what degree it was the increase in domestic production that brought about the price revisions announced during 1926 cannot definitely be stated. Possibly the increase in imports without the increase in the American mills' output might have left the price situation unchanged. Then again the increase in domestic production without the competition from imports might have been absorbed without price change. In any event, the year witnessed two downward revisions in prices due to the two factors mentioned previously.

The actual figures would lend support to the view that the expansion program initiated in 1925 and completed in its major part last year, played the more important role in the year's developments. The production during the year 1925 according to reliable figures was 52,200,000 lbs. For the year 1926 it was estimated that 70,000,000 lbs. would be produced but actually this figure fell somewhat below this total. It can safely be estimated at very close to 62,500,000 lbs. which of itself will show a jump of 10,000,000 lbs. over 1925. The increase in imports of rayon yarn amounted to about 4,000,000 lbs. One is justified in assuming that the increase in domestic production of 10,000,000 lbs. is a more serious matter than a 4,000,000 lb. jump in imports.

Price Readjustment

The two factors combined to make the year 1926 one of readjustment. Producers' list prices were revised on July 1 for third quarter business and in December again it was deemed advisable to once more lower them. To give an idea of the extent of the reductions in condensed form we have selected three staple sizes 100 denier, 150 denier, and 300 denier viscose yarns and give the prices on Jan. 1, 1926, July 1, 1926 and Dec. 31, 1926.

	Price on		
Size	*Jan. 1*	*July 1*	*Dec. 31*
100 Den.....	$2.90	$2.55	$1.90
150 Den.....	2.00	1.65	1.45
300 Den.....	1.75	1.50	1.25

At the start of the year, early in January there was some hint of what was to come later. At this time there was some underselling of foreign yarn as there had been late in 1925. Considering the fact that imports during the months of November and December of 1925 had amounted to an average of 1,000,000 lbs. a month, it is not surprising that there should be some pressure to move this type of yarn. The import firms had been handling considerably less than these quantities and it became necessary to expand their sales. The most natural way to do this was to find new customers and to induce their old customers to take large quantities of the foreign type yarn. Price would be the potent appeal and price was the method employed.

Effect of Imports

In a review of the year's activities, we find that at this early point we have mentioned rather specifically the imported yarn as having a very direct bearing on the domestic price level. Moreover, we realize that throughout this review, it will be necessary to return again and again to the import situation in any analysis of the price movements of rayon over the 12 months. To dwell on the import may seem somewhat at variance with the idea expressed earlier that the increase in domestic production of 10,000,000 lbs. was a more serious matter than the 4,000,000 lb. increase in imports. At this point, therefore, it might be well to state that it is entirely possible that the import market may well have had a more important bearing than the mere size of the figures would lead me to believe.

The reason for this is not an obscure one. It would mean than the price policy of the domestic firms would have been one of prevention as well as cure. Once the foreign yarns were in this country it would be necessary for them to be sold and United States makers would have to stand the competition. But the policy employed could very well take into consideration the fact that it might be well to check still further the rising tide of imports. The most efficacious manner to achieve such an end would be to lower prices to a point that the Italian and German producer, among others, would find it unprofitable to continue shipments.

To consider the matter from another angle, the increase in imports is not a fixed quantity but rather an indeterminate quantity. It is determined by the price level in the United States. On the basis of $2.00 per lb. for 150 denier viscose yarn, which was the price at the beginning of the year, the 4,000,000 lb. increase in imports might easily have been a 10,000,000 lb. increase, if the higher level of quotations had been maintained throughout. Considered in that light, the import situation has been a major factor, with the necessity of keeping out this additional 6,000,000 lbs. of cardinal importance in the calculations of the domestic firms.

Strength Demonstrated

To return to the events of the early part of the year, it is a striking commentary on the strength and the absorptive power of the market at this time that by February, things were running pretty nearly normal again. The increase in imports had been absorbed and the domestic producers were again talking about the necessity of rationing their customers. Business held up in good fashion during February and March with prices well maintained on the basis of $2.00 for 150 denier "A" quality. Only at sporadic intervals did rumor bring out the bogey of Italian yarn. Some reports went the rounds that a few contracts had been put through at well under the list prices but these bargains concerned foreign yarn exclusively and then only in special instances.

Late in March and in April, more competitive conditions made their appearance in textiles generally. The cotton and rayon numbers were under fire at times and the clear skies began to darken with the threat of an approaching storm. Domestic demand began to contract, particularly with the cotton and hosiery trades and to a lesser extent with silks and ribbons. At this juncture domestic producers took cognizance of the competition from abroad and if rumor is correct, they began to go after business themselves in a rather decided fashion. The $2.00 basis became the nominal level rather than the actual level. To further complicate a delicate situation, one of the largest firms handling knitted materials put through a 10% cut in the price of most of their numbers explaining that advantageous purchases of foreign yarn of standard grade enabled them to make this move.

Other firms making the same class of materials could not meet this cut using the domestic yarn and quantities of standard viscose yarn found itself back on the market through the medium of resales through brokers. It was pretty well realized that something radical had to be done. In June the only question was the size of the reductions that would be announced for the third quarter. The great majority of those having an interest in the question were of the opinion that the drop would amount to 50c per lb. for the 150 denier yarn which would put the market at $1.50 per lb.

The First Cut

At the very end of June the announcement came. It was not a 50c drop. The new basis for 150 denier yarn was $1.65. Looking back we can very readily say that this cut was not sufficient and such was the opinion of the majority of buyers. The larger producers issued optimistic statements and stated that no further reductions were to be made but the cotton, hosiery, and underwear buyers remained skeptical. They believed that other cuts were coming.

Over the fall months, business went forward in volume but the volume was attained by large numbers of day-to-day sales instead of a few large contracts for months in advance. In other words the rayon market had at last fallen into the hand-to-mouth class. Just what proportion of the business done over the second half of the year on a lower basis than list prices of $1.65 will not be known but a guess can be made that it was substantial. It must have been to meet the competition of foreign yarn which was again coming in at the rate of nearly 1,000,000 lbs. a month and selling at a level that would make it attractive to buyers even though the quality might not compare.

A statement of one importer at this time is interesting. Explaining the

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fact that his price was $1.45 per lb., he said that it had been put at this level only because prior to the price cut, it had generally been thought that the domestic prices would be lowered to $1.50. He wanted to be just under them. The inference was that he would be doing just as well had he named $1.55 as his prices and that the $1.45 price represented a clear gift of 10c per lb. Very shortly after this, a prominent dealer in coned yarns advertised rather widely a price of $1.50 for standard viscose "A" quality on cones.

Since it is necessary to deal in inferences most of the time in the rayon market, we can readily infer that this dealer must be buying his rayon at $1.25 per lb. or less This inference can be made with such assurance due to the fact that rayon cannot be coned for less than 25c per lb. As a matter of fact, if memory serves us right, it was but a little while previous that lire exchange had touched the low which would make possible a still lower price than $1.25 for 150 denier.

The Second Cut

Despite sharp rallies in the exchange rates for France and Italy later in the fall, quantities of foreign yarn continued to be sold cheaply. In November there was some talk of revision in the domestic price level. Early in December the Du Pont Rayon Co. took the initiative and reduced the standard grade to $1.45 per lb. The Viscose Co. followed suit almost immediately and the others did likewise. One very interesting thing in connection with this final revision was the way that it was made. Instead of the Viscose Co. taking the lead which would be the natural thing in view of its size and importance, it was the Du Pont Rayon Co. that set off the fireworks.

Throughout the year there has been a growing insistence on quality. Mills claimed that the imported yarn in the "A" quality was not good enough and the writer knows of experiments on the part of knitters of fabrics to use the foreign rayon only to have to return to the domestic yarn. The domestic makers appear to be meeting this need successfully by improved methods which reduce the proportion of "B" and "C" yarn which after all is nothing but "A" yarn gone wrong.

By such a large proportion is the yarn made and used in this country of the viscose type, that we have confined this review to the viscose yarn. At the same time it might be pointed out that the viscose yarn noted alone the sharply competitive conditions of the year 1926. The American Cellulose and Chemical Mfg. Co. Ltd. did not reduce their prices on Celanese and at the present time there is no indication that they have the slightest intention of doing so. As a matter of fact it is known that experiments being conducted by silk mills for instance confine their attention to other than viscose yarns. The finer denier acetate yarns have been used for warps in silk and rayon goods in direct competition with raw silk.

Outlook for Rayon Consumption

THE following symposium represents the views of the individual market editors of TEXTILE WORLD regarding the outlook for rayon consumption in their respective branches of the industry.

* * *

KNIT GOODS

Underwear: In the underwear field the development of rayon has progressed during 1926 along similar lines to those noted the year previous. In other words, the large bulk of production has been on ladies' underwear with comparatively little modification of styles. It has been recognized however that correct colors form a very important part of the lines which are brought out for use by women. A color range may be successful or not according to the care and skill with which the combinations are determined. It has been found by experience that certain garish shades will not meet with favor by the trade and that it is necessary to produce a color harmony that will blend with other garments and not clash.

An increase in the number of all-rayon garments for men has been noted but still they do not form a very conspicuous part of the rayon underwear industry. The type of garment brought out is such that it cannot enter the popular class and it is a difficult matter to induce the male consumer to pay the price necessary for a worth-while rayon garment.

On the price situation it is coming to be realized more and more that rayon underwear occupies a place by itself. It stands between the cotton garment and the glove silk garment and should not be regarded as a competitor of either. It of course will interfere to an extent with cotton underwear but to make it on a competitive basis would mean that the resultant product would undoubtedly be far from satisfactory. A good many complaints are heard as to the wearing qualities of rayon but these are being minimized as improvement in the fiber is made. Pulling of seams and disintegration of the fabric were early complaints that in well made lines do not form a conspicuous feature today. Also complaint as to harshness has faded out of the picture for the most part. It is realized however that close attention must be given to the type of fiber used and the quality in this type that is selected for this class of product.

Hosiery: As far as hosiery is concerned, there seems little doubt but that the greatest development for rayon is in combination, either with wool or silk. All-rayon stockings are shown extensively and a large export business is done on these but the figures for the first 11 months of 1926 indicate that there has been a decided falling off in export demand for rayon hosiery. This may not mean as much as it would seem on the face of it because all classes of export hosiery have declined, both in quantity and particularly in value. The stabilization of the fiber market has given both manufacturers and buyers greater confidence in the future and the current year is looked forward to with a good deal of optimism as a period in which rayon hosiery will show a decided increase both in domestic and foreign demand.

* * *

COTTON GOODS

Rayon combinations in cotton goods have been one of the features of recent style development. Of course they are not new, but public taste is gradually molding new ideas as to what is best in this field. The crude, garish use of rayon in large lustrous patterns, seems to have passed into history so far as dress goods are concerned, and the popular numbers are neat effects which are more subdued and refined in tone. Rayon decorated voiles have been a feature during 1926 in some quarters, and there is distinct evidence of desire for good quality goods. The extreme novelty use of rayon has passed the peak of its popularity, merchants believe, but its more substantial use as an inherent part of the cotton dress goods line has only just begun, and in poundage consumption this will bulk large.

Rayon alpacas started the year of 1926 with high hopes of success and large sales. The fact that they were saleable attracted many mills to them and many succumbed to the temptatin to reduce the quality and cut the price. Before they got through the fabric had very little merit, and women who bought the sub-standard materials were disappointed in them. It is reported by buyers that the interesting feature about the movement was that all of the goods, good and bad, sold at about the same retail price. Here is an example of a cheapening of quality from which a few distributors may have benefited temporarily, but from which everyone suffered in the long run. Desire for good quality is stressed by buyers, but when they get the chance they seemed quite willing to take the cheapened goods in the hope of wider margins of profits. It seems self-evident that satisfactory quality must be maintained in rayon goods if they are to succeed, because poor wearing quality is the only general complaint brought against them.

In draperies rayon has come to be a leading material and drapery distributors have augmented their business as a result of the bright and attractive effects which rayon makes possible at a small expense. The use of rayon in colored bedspreads is another wide use for which the material is popular in the cotton goods field. Bedspreads in crinkle effects featuring rayon have been large sellers, and attractive effects are produced at a price which would be quite impossible with any other material. A certain amount of rayon fabrics are also successfully used for linings, or for slips to be worn under dresses.

A number of buyers appear pessimistic on the subject of rayons because of experiences with poor wearing qualities resulting in complaints from customers. Such merchants will stock rayon materials more cautiously in the future, but when they find goods on which they can depend, self interest will draw more business from them. Mills will eventually take their cue from this and supply dependable goods.

* * *

WOOL GOODS

In the woolen dress goods field there has been little or no expansion in rayon consumption during the last year. Woolen or worsted fabrics in which rayon decorations are prominent held the market's interest for only a short time when they were a novelty. Since then the best use has been through deep mixture in the body of the fabric for the purpose of producing a two-toned effect in one dye bath since the dyes which take on wool do not take on rayon.

In the development of bolivias for the women's coating trade rayon has a distinct place for use in the face. For this purpose rayon waste is more generally utilized and prior to spinning it is often mixed with wool.

In the men's wear trade makers of tropicals have found that rayon decorations lend more life to their product than the mercerized cotton which had been their previous standby. In the regular line of men's worsteds rayon decorations are frowned upon and so small an amount of decoration is used per yard that the additional cost of using real silk decoration is readily absorbed. Until style demand brings back more definite interest on the part of women in woolens and worsteds, rayon in this field will meet little expansion. The fact is that only a limited yardage of all kinds of wool goods has been bought for women's wear, and rayon mixtures have merely suffered a decline with the rest of the market.

* * *

SILK GOODS

The depression in silk goods that was noted in the months of March, April, May, and June of 1926 offered rayon a glorious opportunity to take a real hold in manufacture of staple silks. In the latter months of the depression there was a very competitive condition existing due to the large quantities of distress merchandise moving at low prices. Silk mills in view of the large buying power that was absorbing this merchandise searched frantically for something to bring down costs and still give a fabric that approximated the regular goods.

Two alternatives presented themselves. The first was to use rayon in combination with silk and thus obtain a lower cost yarn. The second was to take the same materials they were making, leave out some of the silk and then weight the goods with metal salts. It is significant that the second was chosen and throughout the fall months this trend to weighted goods increased. Manufacturers adopted this course because it was the

simpler and because it did not involve the experimentation that the use of rayon would necessitate. If the ground had been prepared beforehand and—if rayon were suitable at all for use in staple silks—the first half of 1926 was the critical time to prove it.

Silk mills have not abandoned rayon for staple goods. In the fancies they were used to about the same extent relatively as in previous years. No gains were recorded and it is not likely that 1927 will reverse the trend. In certain qualities of rayon, notably the acetate type and particularly the finer deniers, silk mills have been carrying out some exhaustive experiments. It is probable that during 1927 these qualities of yarn will enjoy an increased use in silk and rayon goods. The writer has seen rayon and silk satins that in appearance and feel were superior to pure silk goods. They did not compete on a price basis as the price was about the same. The interesting thing is that the goods were not just as good as all silk—they were superior. The reason is that using a 4 denier rayon for the warp, the manufacturer achieved an evenness in his yarn that could not be approximated in raw silk even in the highest grade Japans or steam filatures. Perfect merchandise was the result.

The real difficulty is price. Raw silk is coming down in price and Japans can now be bought in the lower grades under $5.50. Cantons are $3.90 for the 14/16 grade and $3.60 for the 20/22. Compare this with the prices of the finer denier acetate and cellulose yarns. The outlook for 1927 is for somewhat greater use of special qualities and sizes of rayon but no outstanding gains in the viscose type.

The International Situation in Rayon

Disturbance in European Trade Dates Back to Levying of British Excise Tax—Continental Countries Turned to United States for Outlet—Possibilities of Oriental Consumption—Domestic Price Situation May Tend to Reduce Appropriation for Further Research

By Hiram T. Nones

Assistant Chief, Textile Division, U. S. Department of Commerce

RECENT events in the world's rayon producing centers have caused considerable comment and adjustment in the flow of imports and exports from and to the various countries. There is much concern as to whether the present market levels of price and the apparent monthly production of the various producing units are now on a normal basis. For the benefit of the uninformed, the rayon horizon was clear of any threatening clouds up to the first of July, 1925, at which time the British Government levied an import duty as well as a domestic excise tax on rayon and silk yarns and fabrics.

This action completely upset the equilibrium of the European rayon trade. Italy and the Netherlands principally had depended a great deal on the British market as an outlet for their surplus. When suddenly confronted by a tariff imposed by their principal customer it is obvious that these European countries had to seek other markets for their products.

They naturally turned to the United States as being one of the best potential markets for their surplus, the United States being at that time and still remaining, the largest consumer of rayon in the world. Incidentally the United States is the largest producing country not only in quantity but in respect to quality as well. Notwithstanding the keen competition of the American mills, our imports for consumption during 1926, estimated on the basis of 11 months, approximate 9,900,000 lbs. At the same time we produced 61,855,000 lbs. making an apparent domestic consumption of 71,755,000 lbs. for last year. The ratio of domestic production to domestic consumption during 1926 was about 86% as compared with 90½% in 1925, in which year we had an approximate domestic consumption of 57,250,000 lbs., a rather healthy increase at least from the viewpoint of manufactured materials.

The expansion of rayon manufacturing plants in both Europe and the United States may be somewhat curtailed for the time being at least, with the possible exception of British units where the tariff and excise tax will foster the growth of the British industry. The American production for the first six months of 1926 was about equal to expectations. The last half of the year, however, shows a relative decline in pounds produced as compared with the first six months with the net result that the 61,855,000 lbs. produced during 1926 were about 10,000,000 lbs. under the market estimates of the first part of the year. During the last six months of 1926 the imports were at the rate of 5,096,000 lbs.

Other Markets

The European producers have not depended entirely on the American market for an outlet for their surplus. It is interesting to note that many others markets have been cultivated including China, India, and Latin America where there are excellent chances for quantity business in the future. When oriental countries take to the use of certain fabrics the potential market for such fabrics could be considered unlimited. If, for instance, the Hindoos should demand rayon stripes, even though only one inch wide on the cotton fabrics which they would use for their sari, I will venture to say that all the rayon plants existing today would have difficulty in supplying the demand. Indications are that this will be the case in the very near future as I have seen reports stating that a small quantity of rayon yarn is being used on the hand looms of India, not to mention the domestic uses in China and Japan.

The Japanese, although they are expanding their domestic rayon industry, which at present amounts to approximately 3,200,000 lbs. per year with imports of 833,000 lbs. additional, hope in time to build up an industry sufficiently large to supply other oriental countries, but it would appear at the present rate of expansion that the Japanese ideas are many years from realization.

Coming back to the American situation, although market prices of rayon today are lower than ever in history, the general quality is hundreds per cent better than during pre-war and war periods and I still believe that the continued success of rayon in the United States textile trade is based on quality and not price. Some market analysts have contended that the market value of quality rayon today, if anything, is too low, just as some say the price of cotton is so low as not to bring a fair return to the producer.

In respect to rayon this idea may hold at least to the extent of suggesting that the present return on American made rayon may not justify the appropriation by the producers for laboratory research to the extent to which they have in the past and which has been the principal factor in making the quality of rayon what it is today. The proportion of net profits applied to research by the rayon producing companies has perhaps been higher than that of any other American industry, surely within the textile group, and any curtailment in expenditures of that kind in the rayon industry is bound to reflect in the quality of the future yarn, and to a greater extent than could be possibly offset by any advantage of the cheapest possible price per pound on mass production basis.

Ribbons Improved Last Year

Use of Brighter Hat Bands on Men's Straws and Felts Account for Increases

TAKING conditions generally, 1926 was a year of expanding business in ribbons. The improvement did not apply to all lines of ribbons but concerned itself with certain types which enjoyed unusual prosperity and large sales. The demand for these favored numbers was sufficient to enable the reviewer to characterize the ribbon business as satisfactory as a whole with many mills enjoying almost boom conditions. The index of operations of narrow looms points clearly to the expansion in production that has taken place.

To listen to nearly any ribbon manufacturer, one would be justified in assuming that the same dreary conditions existing in 1924 and 1925 prevailed. A glance at the actual results as measured in operations in the ribbon mills is more illuminating. At the low point of the depression in 1924, per cent of available machine hours operated had dropped to the low figure of 43%. By the end of 1924 this had risen to 51%. By the end of the following year 1925 it had risen to 59%, while it is significant that at the end of the current year another gain had been scored to 69%. It is therefore evident that while broadsilks were declining from the prosperity enjoyed in 1925, ribbons were making further gains.

Hat Band Impetus

Much of this improvement can be ascribed to the extraordinary popularity enjoyed by the brighter hat bands which came into almost universal use. The cheerful colors one saw everywhere on the straw hats of last summer made hat band manufacturers cheerful also. It accounted for some of the gains in operation during the spring months and for the fall the brighter hat bands continued in favor for felt hats. Millinery also used more ribbons particularly on the larger types of hats worn for several months last spring and summer.

These comprise the outstanding types favored in 1926 although certain types of dress ribbons noted an increased call due to the efforts of designers to elaborate their models in the dress trade. For millinery types, demand fell off somewhat in the fall due to a universal return to the small felt hats that have proven the bane of the millinery trade. Even in spite of this, ribbons continued fairly active with belting and grosgrains accounting for the greater part of the business.

Considering the vitality of the ribbon industry, the present situation would seem to indicate that the worst of the post-war trend in styles has been experienced. The existing demand might thus be considered the minimum, even under adverse conditions, from a style viewpoint. The steady improvement noted in the last two and a half years would bear this out and point to the fact that stability at least has been accomplished.

Delusterized Effects on Celanese Fabrics

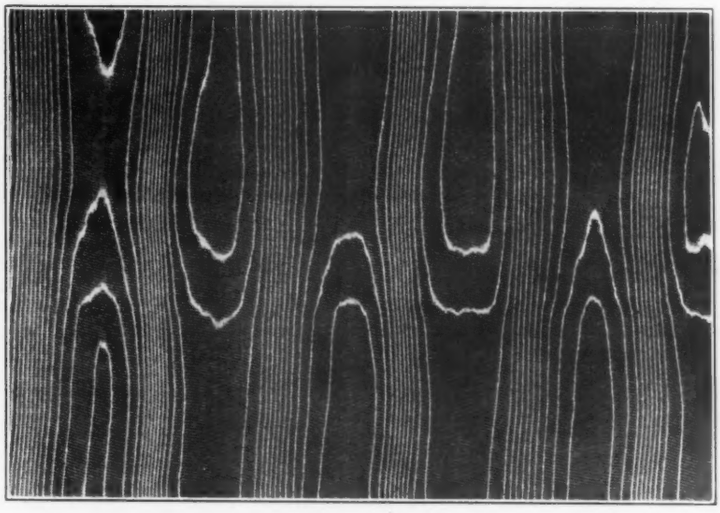
Development of New Process One of Outstanding Achievements of the Year—Jacquard-like Designs May Be Secured by Restoring Luster Within Limits of Pattern—Metallized and Leatherized Celanese Fabrics Are Also Being Developed

FROM both a technical and a style standpoint, one of the outstandingly interesting developments in the artificial silk field last year was the work done by the American Cellulose and Chemical Mfg. Co. Ltd. on the delusterizing of Celanese fabric. Extending as it does the range of effects which may be secured by the use of this yarn, this latest step is another example of its flexibility.

Although the distinction between Celanese and the so-called regenerated cellulose types of rayon is by now quite generally understood in the textile industry, it should be reemphasized, by way of preface, in order that this new development may be understood. The regenerated cellulose types, including viscose, nitrocellulose and cuprammonium, are, chemically, cellulose. In other words, to produce them, some form of cellulose, such as wood pulp or cotton linters, is dissolved in a suitable solvent and later "regenerated" from the solution as pure cellulose in the form of a lustrous thread. Celanese, on the other hand, represents an actual chemical combination of cellulose and acetic acid; consequently the yarn, as sold on the market, is not cellulose but cellulose acetate.

As previously indicated in these columns, this chemical difference accounts for many marked distinctions between Celanese and regenerated cellulose rayons, both as regards physical properties and reactions to outside agencies. One of the most interesting differences is its distinctive dyeing quality, which has been capitalized by the manufacturers so that, by the use of a specially developed series of dyes, various cross-dyed effects may be secured on fabrics containing Celanese in admixture with other fibers.

Similarly, this latest development in the direction of delusterizing Celanese has been made possible by the distinctive reactions of that material. The process is being used by the company in its own production of Celanese fabrics and is also being made available to textile manufacturers who are using Celanese in their processes.



An All-Celanese Voile (This Is Not a Delusterized Fabric)

No Chemical Change

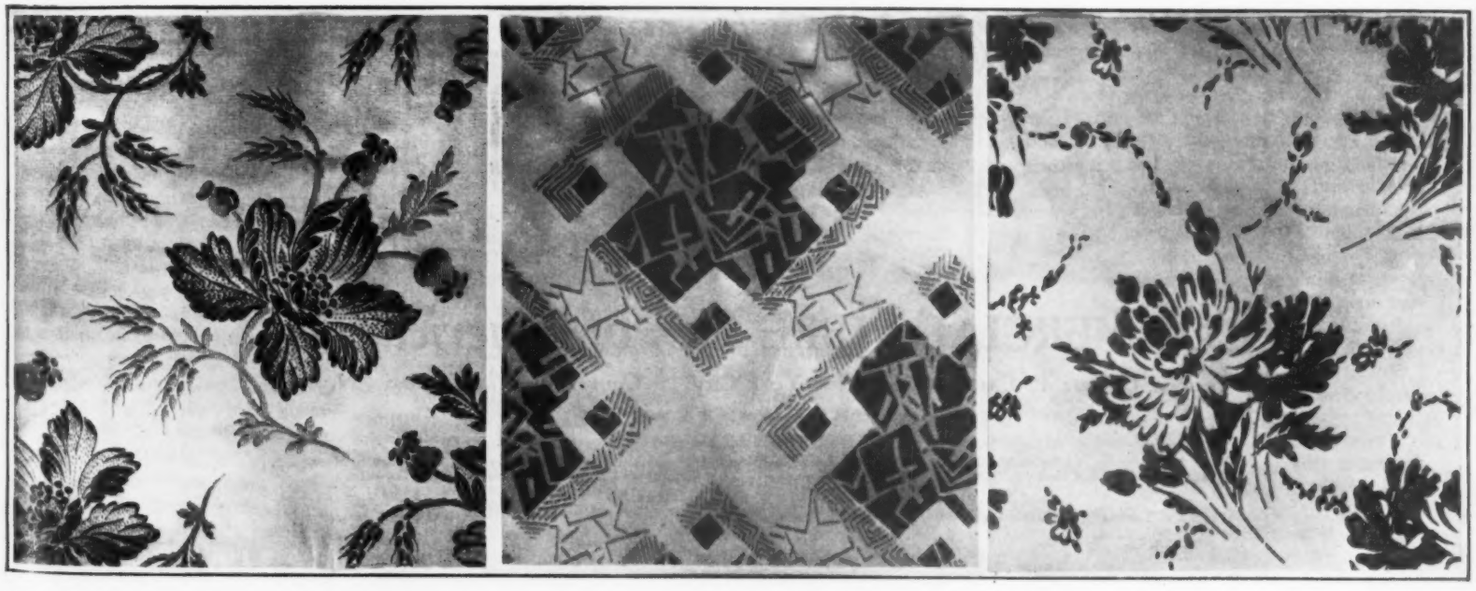
The delusterizing is accomplished by a simple process which may be carried out in any dyehouse, after proper instruction has been given. It may in fact be done simultaneously with the dyeing, or separately as preferred. In this way, dull finished goods may be produced to meet the whims of fashion but at the same time the resulting product will have the original chemical properties of Celanese. The delusterized material is still, chemically, cellulose acetate—the change in luster being due to an interesting physical phenomenon. Furthermore, the dull effect is permanent and cannot be removed by washing, and gives an even better "hand" to the fabric than when not delustered.

On the other hand, the luster of the Celanese can be restored by a special chemical treatment developed by the company, and this is made possible by one of the most interesting and important phases of the achievement. By applying this restorative chemical treatment within the limits of a pattern on a printing machine, a lustrous design against a dull background, with the resulting contrasting color effects which difference in luster always gives, may be secured. In other words, a jacquard-like design is achieved on one construction of cloth. These are permanent against washing and dry cleaning.

The operation may be carried further by the addition of color to the chemical printing paste so that a lustrous pattern of a different color is produced on a delusterized ground. These lustrous prints of color on color are also permanent against washing and dry cleaning.

One of the outstanding fabrics on which the company has developed this new process is its satin, which, after being delusterized and restored within pattern limits, is sold as "Brocaded Damascé Satin," and which represents all that that name implies.

The process has possibilities for employment in a wide variety of uses and is proving of interest to manufacturers of hosiery, underwear, beach shawls and piece goods. Incidentally, the company feels that it has a particularly interesting application to men's underwear as it enables the production of a garment which is light in weight, comfortable,



Three Different Patterns on All-Celanese Fabrics Which Have Been Delusterized—and the Luster Restored Within the Limits of the Design. (Note—These Photographs Indicate Greater Contrast Than Actually Exists)

In THE SOUTH

Nashville
Chattanooga
Atlanta
Birmingham
Macon
Charleston
Savannah
Columbia
Johnson City
Lynchburg
Roanoke
Raleigh
Charlotte
Spartanburg
Greenville
Durham
Florence
Camden
Augusta
Montgomery
Tuscaloosa
Anniston
Gadsden
Decatur
Athens
LaGrange
Columbus
Thomasville
Tallahassee
Pensacola
Mobile
Meridian
Jackson
Vicksburg
Memphis
Knoxville
Bristol
Asheville
Wilmington
Fayetteville
Greensboro
Winston-Salem
Danville
Richmond
Norfolk
Petersburg
Newport News
Portsmouth
Suffolk
Hopewell
Williamsburg
Fredericksburg
Alexandria
Arlington
Falls Church
Manassas
Culpeper
Front Royal
Winchester
Harrisonburg
Staunton
Lexington
Buena Vista
Covington
Clifton Forge
Bluefield
Pulaski
Radford
Christiansburg
Blacksburg
Martinsville
Danville
Lynchburg
Farmville
Petersburg
Hopewell
Emporia
Franklin
Suffolk
Portsmouth
Norfolk
Virginia Beach
Newport News

perspiration-proof, and yet without a pronounced sheen to which men usually object. This eggshell finish lasts indefinitely on the cloth and is also permanent against washing and dry cleaning.

The accompanying photographs of certain of the delusterized effects secured on Celanese fabrics do not do full justice to them, as no black and white print can fully bring out the color relations, but they indicate the interesting flexibility of design which the process has made possible on one weave of cloth.

Other New Developments

Nor is this the only method which has been developed for extending the effects procurable with Celanese. There is now in the course of perfection a process which will impart to Celanese fabrics a striking metallic appearance, the brilliant glint being brought out in various colors, both solid and printed.

Possibly of even greater interest is the new process being developed for leatherizing Celanese goods. By this method, the fabrics are given the appearance of leather and yet retain the delicacy, softness and draping qualities of the unprocessed material. It is stated that they are adaptable for evening gowns as well as for garments of a more utilitarian character and it is expected that the process will find a wide sphere of application, including hats, millinery trimmings, overcoats, motoring coats, traveling robes and shoes.

In addition the leatherized fabrics will also be supplied as water-proof materials as tests have shown that they hold water for a considerable time. This will make them suitable for rain-coats and for this purpose a special finish is given. This same feature makes the fabrics of interest to manufacturers of light sport dresses, as they will keep the wearer dry in the event of showers. These fabrics can be furnished either with the usual luster or in the delusterized finish.

Another recent development of the Celanese organization is an all-Celanese faille moiréd. This cloth takes a more distinct moiré than any other fabric so far developed. The photograph herewith shows a moiré design on an all-Celanese faille. An additional advantage of moiré on Celanese is that it is permanent in damp weather, and even washing does not remove the moiré effect.

Rayon Quite Lively for a Corpse

(*Continued from page 162*)

tremely low prices will also open up new fields heretofore impossible. As an example, consider the use of rayon in full fashioned hosiery. With the lower prices of rayon, it will be possible for the full fashioned manufacturer to place his finished hose in a price range to compete with the seamless producer."

E. L. Milliken, treasurer and general manager of The Belamose Corp.: "Our December production was the largest in our history and we are today running at our maximum production. We look forward to the coming year as one in which rayon will again come into active demand and feel that our production is such that it will share in the resulting sales proportionate to our output."

It should be emphasized that these statements and other comments heard by the writer in the trade indicate that sales of rayon in December, immediately following the second price cut, showed record gains indicating an acceptance of the new level by consumers as a stable one. The November reduction seemed to instill much greater confidence than did the July cut, even though the latter was a larger one. It is apparent today that users of rayon regard current quotations as entirely satisfactory, based on present cost of manufacture.

Certainly the immediate future looks sound. As for the broad future, it is so closely tied up with questions of technical development that prediction depends upon the extent of one's vision.

Progress of Companies

The following brief facts present outstanding developments among the individual producers of rayon.

Acme Rayon Corp., Cleveland, O.—This company succeeded The Acme Artificial Silk Co. Capitalization increased and program of expansion started. Increased its output to 400,000 lbs. in 1926. Manufactures 300 denier only. Viscose process.

American Bemberg Corp., Johnson City, Tenn.—Started actual spinning of yarn on Oct. 8, 1926. Will steadily increase production until 40,000 lbs. are made weekly. Cuprammonium process.

American Cellulose & Chemical Mfg. Co., Amcelle, Md.—Continued to increase output. Also started weaving of some fabrics. Cellulose acetate process.

Belamose Corp., Rocky Hill, Conn.—Continued to increase its output. December production was largest in its existence. Viscose process.

Du Pont Rayon Co., Buffalo, N. Y., and Old Hickory, Tenn.—Continued to increase its output at both plants. Viscose process.

Industrial Rayon Corp., Cleveland, O.—Increased its output. Entered into working arrangement with Wamsutta Mills, New Bedford, Mass., whereby latter converts product of the company. B. R. Clarke, formerly vice-president of Tubize, elected president of Industrial. Viscose process.

Napon Rayon Corp., Clifton, N. J.—Completed changes and additions to plant of Cupra Inc., which they purchased. Proceeding with plans for second unit. Cuprammonium process.

Skenandoa Rayon Corp., Utica, N. Y.—Started actual production in October. Viscose process.

Tubize Artificial Silk Co. of America, Hopewell, Va.—Continued to secure greater output from plant. Reported as planning to build another plant either at Hopewell or elsewhere but no official confirmation. Edward V. Peters, formerly general sales manager of New Jersey Zinc Co., elected vice-president in charge of sales, to succeed B. R. Clarke. Nitrocellulose process.

Viscose Co., Marcus Hook, Pa., Roanoke, Va., Lewiston, Pa., and Parkersburg, W. Va.—Completed extension at Roanoke plant and will have new plant at Parkersburg finished on April 1. Can manufacture 45,000,000 lbs. in 1927 if required. Viscose process.

How Analyst Forecast

(*Continued from page 137*)

tember, the possibilities of firmness were noted. In the late months of the year, it was forecast that cotton cloth would not decline in proportion to raw cotton.

Wool Prices

Raw Wool Prices: The forecasts uniformly stated that the major trend was downward until May, at which time stabilization was predicted in one or two months. "Firm to rising prices with no sharp run-up" appeared in the September issue, followed by a statement in October that firm prices would obtain for two or three months. In November stabilization was stated as a possibility, with the general trend toward lower levels.

Worsted Yarn: In February the forecast was for weakness in sympathy with raw wool. In May a stable level was said to be near. The probability of a little rise was mentioned in June. During the summer, yarns were considered unduly low, but no advance was predicted until the September and October issues. The December issue predicted a decline and the January issue said this would last a month or two.

Wool Cloth: The TEXTILE WORLD index of wool cloth prices did not show a single upward move during 1926. At no time during the year did the Analyst forecast an increase.

The forecasts in the wool industry have shown a high degree of accuracy, for in practically no case have prices moved counter to prediction. The most significant improvement over the previous year was made in the worsted yarn forecasts.

Silk Prices

After predicting narrow fluctuations in the raw material last January, the statement that the peak had been seen was made in late February, with the prospect of a lower trend. The bearish attitude was maintained until late in April when stabilization was suggested. Then, in the following months, sinking spells, stabilization, erratic fluctuations were the respective opinions. The October issue forecast a short period of strength, followed by declines toward the end of the year.

It will be noted that the major moves were accurately predicted and the fact that Kansai Best No. 1 to Extra at this writing is nearly 20% below a year ago and is now the lowest since 1924, amply justifies the consistently bearish attitude on the broad trend of raw silk prices during 1926.

General Business

At the beginning of the year conditions were stated to be fundamentally sound and further expansion predicted. In March a moderate recession was announced, to continue till autumn. In July: "The outlook is for continued good general business during the next few months"; "The textile industries nearing a stronger position than they have occupied in several years". In August: "Current period of secondary recovery not likely to last more than a few months". In later issues, moderate recession at the end of the year was forecast for general business.

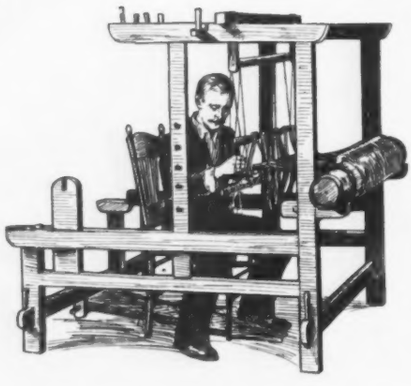
Rayon Knit Goods

(*Continued from page 166*)

cloth moves on to the final inspection, weighing, and measuring department. On inspecting, the cloth is again drawn over a perch, inspected on one side, and then turned over and drawn over the perch again, in order that both sides may have proper inspection. Each imperfection should be marked by tying in a light thread on the edge of the fabric to act as a guide for the cutter. A comparison should be made as to the number of imperfections or damaged places. Should there be any greater number of imperfections in the finished piece than the report shown from the knitting machine, it means that the inspector after the knitting machines has not done the inspection in a thorough manner, or that additional imperfections have been produced in the process of dyeing. The latter possibility requires an immediate investigation.

After inspection, the cloth passes to the measuring department. Measuring is done in most plants by a machine equipped with a dial marked in ⅛ yds., giving the exact amount of yards in the piece. On this operation the operator of the machine must see that the cloth does not vary in width, as very often the cloth from the mangle will show uneven widths. If the cloth is sold to finish 18-in. tubular, the operator should be sure the cloth measures 18 in.—not 17½ or 18½. Should the width not be correct, the cloth should be returned to the finishing machine for a refinish. The cloth is then placed in papers and is ready for the market.

In the past, there have been many new cloths and ideas come into the textile field, but I cannot recall one article that has taken such a firm position in the market as rayon knitted cloth, especially in the underwear lines, and I feel it is safe, judging from the continued growth and present demand, to prophesy that the manufacturer of this article has before him a long and prosperous future.



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Spring-1250

Hosiery Trade Adjusts Itself to Current Buying

Volume of Trade for 1926 Fair and Prospects for Present Year Improved—Question of Fancy Status Still Occupying Attention of Sellers—Increase in Full-Fashioned Capacity Not Regarded Apprehensively—Silk and Rayon both Decline but Markets Considerably Stabilized with Resultant Influence upon Manufactured Goods

A RETROSPECTIVE glance at the year 1926 does not prove as discouraging as a similar review of conditions in many other divisions in the textile industry. Of course, manufacturers will assert that they have not made satisfactory profits and there is no doubt that in many cases it has been necessary to name figures that have eliminated much of the margin between cost and selling price. Nevertheless a majority of manufacturers have run a very fair proportion of their machinery during the year and have based their selling prices not as a rule on 100% running schedule but upon a moderate percentage of their total capacity. In common with other textile markets the hosiery selling agent has been compelled to confront the problem of hand-to-mouth and conservative buying. Also the element of style has played a more important part in manufacturers' considerations than for some time and therefore there has been less certainty than in a market where demand is entirely for staple merchandise.

Manufacturers Adjust Themselves

It is probable that the hosiery manufacturer, perhaps to a greater extent than any other class of textile producer, has more nearly adjusted himself to the current method of buying. In other words there has been comparatively little accumulation of stocks in spite of the possibilities of adding to supplies on hand. Anticipation of demand has been comparatively slight, based on the realization that the buyer was playing a waiting game and that he would take advantage of any glut of merchandise to demand lower prices. Also in spite of a continued call for novelties, it is believed that the upswing of fancies has reached its apex and that the tendency is in the opposite direction. This is not to intimate that fancy half hose is going out although there are those in the market who contend that the demand for staples will supplant a very substantial amount of fancy hosiery. Nor is it intended to enter into any lengthy discussion of the possibilities of fancies versus staples. Suffice it to say there continues to be a sufficient number of new lines brought out to indicate the belief on manufacturers' part that they will continue to be taken by the trade.

Fancies in Children's Hose

It is apparent that an evolution is going on in lines of children's and misses' goods which has not been fully developed. In other words there continues to be more or less uncertainty in buyers' minds as to the class of goods which will be taken in this division. One thing seems certain and that is that demand is for full length stockings, apparently based on the supposition that the child and the miss are aping the style of their mothers and that therefore the short leg or the rolled top is a thing of the past, at least for the time being. It is also a question in many sellers' minds whether the unfashioned stocking is to continue to be taken for this class of consumer. The staple ribbed article in children's goods is not being received with as much favor as it was, even in spite of the generally agreed-upon tendency toward staples. It is possible that this trend may be offset by a fashioned seamless stocking with fancy leg and full length. New lines of this class of merchandise have lately made their appearance and it is reported they have been received with considerable enthusiasm by the trade.

With regard to fancy half hose, the remark may be made that increased sale of this type is not being witnessed in the East but this does not apply to western trade. In other words, it is largely a geographical trend and the question is, which section is to prove the dominance of either type. The argument of those who look for a decadence in the status of the fancy is that manufacturers have well-nigh reached their limit in the production of new patterns and combinations of color. Also they argue that the knitter is very apt to lose any profit that he may have made on a particular line by over-staying his market. Accumulations of unsalable merchandise are very easy in fancy half hose. When a style has become old and this is not a matter of any prolonged period, drastic cuts are necessary in order to move them in any way. Nevertheless there is increasing experience to base a prediction of improved pattern work and better color harmony. He would be daring who would predict that the full range of fancy styles has been run. Certain it is that the newest things that are brought out are taken without very much argument and although demand is constantly for something novel, this request on the part of the buyer seems to have been met with ability to develop new ideas in this class of merchandise. As a matter of fact, fancy half hose would have been in more general demand at a much earlier date had the attachments which are now on the market been available to manufacturers. The early attempts at fancy half hose were crude in the extreme but as the machinery end has developed the opportunity of devising handsome effects and tasty combinations of colors has assured the maintenance of the vogue.

Increased Full Fashioned Capacity

Last year in a review of the market it was stated that manufacturers of full fashioned goods were increasing their capacity as rapidly as machinery was available. This increase has been going on during 1926 and together with the additions to already existing plants in the way of equipment there has been a steady growth of new units designed for this class of manufacture. All of these mills are not in operation as yet, but the added total capacity of the industry has been sufficient to make the market more competitive and to eliminate the possibility of allotting merchandise as has been done so often in the past. By this it is not meant to convey the impression that full fashioned demand is to show a decline. On the other hand, there is every evidence that with the growth of the population there must be an inevitable increase in the call for full fashioned hosiery. It is the style to wear this class of hose not only in this country but also abroad. Not until the country is faced with panic conditions, which seems most remote, is there likely to be a swing away from full fashioned.

At the same time there is a feeling that developments in seamless silk hosiery with the production of a mock seam, hard to distinquish from the full fashioned, may be of sufficient moment to increase the demand on this class of goods and by so much lessen the call for the true full fashioned article. Seamless manufacturers have not had a particularly happy time of it in 1926, especially those making cotton goods. The great bulk of demand has been on silk even in the seamless stocking, and there is no indication that this is going to change. Indeed buyers talk silk for 1927 almost to the exclusion of cotton except in the lowest grade of goods. Of course this does not apply to such an extent on half hose, especially in fancies where the seamless article has a place from which it is not likely to be dislodged.

HOSIERY EXPORTS FOR 11 MONTHS ENDED NOVEMBER

	1926		1925	
	Dozen Pairs	*Value*	*Dozen Pairs*	*Value*
Cotton hosiery	4,406,322	$7,846,994	5,003,663	$9,505,179
Silk hosiery	899,371	8,405,498	1,117,983	9,636,265
Rayon hosiery	1,153,470	4,355,379	1,439,994	5,728,676
Total	6,459,163	$20,607,871	7,561,640	$24,870,120

HOSIERY IMPORTS FOR 11 MONTHS ENDED NOVEMBER

	1926		1925	
	Dozen Pairs	*Value*	*Dozen Pairs*	*Value*
Cotton hosiery	456,729	$1,491,062	523,928	$1,801,901
Wool hosiery	358,015	2,549,423	499,230	3,491,792
Total	814,744	$4,040,485	1,023,158	$5,293,693
Excess of exports over imports	5,644,419	$16,567,386	6,538,482	$19,576,427

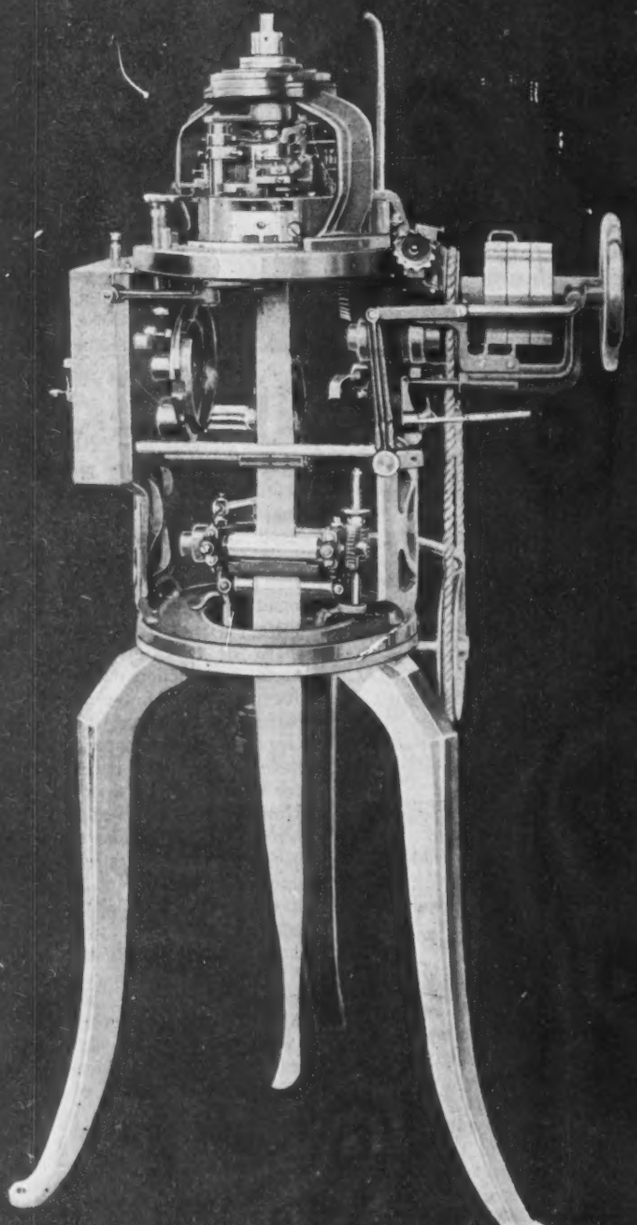
Influence of Raw Material

Silk markets have during the greater part of the year been playing into the hands of the manufacturer. The majority bought their supplies on a favorable basis and with an upward trend were able to realize a satisfactory margin of profit. During the late months of 1926 however silk turned in the opposite direction and at present is more or less uncertain. This has meant a reduction on hosiery to conform with the lower prices for raw material. It has also meant conservative buying by manufacturers, who have not felt that the market was right for anticipation of their requirements. However it is believed today that the level of prices is fast approaching a basis for freer operations. With key numbers on a level of $5.50 a pound it is felt that little risk would be incurred in placing a fair proportion of the season's requirements.

The cut in rayon naturally disorganized lines made from this fiber. A good many adjustments were made and the market at the close of the year was on a basis of the new levels established. Also there is a very decided feeling that the rayon situation has been stabilized and that a period of firm prices can be anticipated for at least most of the current year. Certain objections to rayon hosiery have developed from the consumer but they have not interfered materially with a growth in demand for all rayon or part rayon merchandise. It is probable that the export business on rayon hosiery has not equalled that for 1925 but this demand still forms a very important part of hosiery buying and with favorable prices it is expected that the coming months will show an increase in the total volume of rayon and all-silk merchandise sent out of the country.

Demand for Longer Boot

An insistent call for longer boots in full fashioned silk hosiery has been noted throughout the year. For a time the stock of short boots was such that it was necessary to name very low prices in order to move them. This



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had a reactionary effect on the whole market for full fashioned, but these stocks in first hands were cleaned up before the year closed and though retailers still have a certain amount on hand they are not a very important factor at the present time. Attempts to bring out an all-silk hose to retail at $1.00 have so far been futile. There is no telling when with lower costs this level may be reached and if it is possible to make a desirable article at this strategic price it is believed the volume of business to be obtained will be most attractive. It will also mean that the introduction of such a number would have a very depressing effect upon higher priced merchandise although if any tendency is to be witnessed in the full fashioned field it is toward trading up. The finer qualities are the most favored—a pretty effective commentary on the general prosperity and buying capacity of the country. Naturally it costs more to produce stockings with a longer boot than those with a short boot. The consumer however apparently appreciates this and is willing to pay for the article that is in style rather than to economize by buying something that can easily be recognized as not in accordance with the general vogue.

Infants' Hose Perplexing

The situation in the infants' hosiery market has been very complex. Selling agents have complained that the buyer has delayed furnishing details to an unusual degree. This may have been due to the uncertainty in the buyer's mind as to the exact type and style of merchandise his trade would demand. Fancy legs, plain legs, fancy and plain tops have all been offered in competition and it is natural that there should be some confusion as to the proper thing to buy. Although it cannot be said that there is any universal declaration as to the type which will be most largely taken buyers seem to have leaned toward the plain leg with fancy top and naturally by this time have given their details and are demanding prompt shipment.

What of the Future?

As wholesalers have come into the market the first of the year the question naturally uppermost in the minds of selling agents has to do with the character of buying. It is realized that only a comparatively small proportion of buyers' needs for the spring season has been placed. It is also appreciated that it is somewhat anomalous to think of fall buying when so much is still to be done for the next few months. And yet there is a belief that consideration will be given to wool hosiery for next fall delivery during the buyers' presence in the local selling market. Indeed agents feel rather optimistic about wool business based largely on the smallness of buyers' stock. The majority of wholesalers have cleaned out wool goods very satisfactorily. This is particularly true of the West where cold weather has been a propitious element in the situation. To be sure this was not the case early in the fall but later climatic changes made up for early lacks. Wool and rayon mixtures are expected to be favored by the majority of buyers with the result that those lines which show decided merit in styling will be well taken care of in the majority of instances.

Exports and Imports

The export of cotton hosiery for the 11 months ending November shows a decrease in total volume as well as in the aggregate value. For this year a total of 4,406,322 dozen pairs have been sent abroad, valued at $7,846,994. These total compare with 5,003,633 dozen pairs, valued at $9,505,179 for 1925. Cuba is the largest purchaser of American cotton hosiery, taking 756,508 dozen pairs at a value of $1,348,080. Next in order is the United Kingdom, buying 608,695 dozen pairs at a valuation of $672,544. There is a notable decrease in the money value of exports to Great Britain for during the same period of 1925 the total value of exports to that country aggregated $1,186,915 on an aggregate sale of 786,669 dozen pairs. In 1925 Argentina was the second largest customer of American hosiery, buying for the 11 months 774,901 dozen pairs, at a valuation of $1,793,573. This year for the same period the aggregate sent to this country was only 160,481 dozen pairs, valued at $376,064.

On silk hosiery there has been a decided slump, both in quantity and value. The total sent abroad was 899,371 dozen pairs, valued at $8,405,498. This compares with 1,117,983 dozen pairs in 1925, valued at $9,636,265. Much of this decline is due to the falling off of English demand. Only 212,834 dozen pairs, valued at $1,761,043 were sent abroad in the 11 months of 1926 compared with 616,691 dozen pairs, valued at $4,998,306 in 1925. Argentine increased its takings of silk hosiery, the amount sent in 1926 being 118,836 dozen pairs, valued at $1,249,796 as compared with 90,782 dozen pairs, at a valuation of $820,626 in 1925. The only other country taking any large quantity of silk hosiery was Australia, where the imports for 1926 amount to 100,607 dozen pairs, valued at $1,227,831 compared with 54,802 dozen pairs, valued at $648,194 in 1925.

In line with the falling off in cotton and silk hosiery exports, rayon hosiery also discloses a loss as compared with 1925. The aggregate shows a total of 1,153,470 dozen pairs, valued at $4,355,379 compared with 1,439,994 dozen pairs, valued at $5,728,676 in 1925. Here again the falling off in demand from the United Kingdom is responsible for much of the loss. In 1925 this country took 615,045 dozen pairs, valued at $2,694,327 while in 1926 the total was only 139,967 dozen pairs and the shrinkage in value was down to $757,932.

The decline in exports is almost equalled by a corresponding decline in imports. For the 11 months of 1926 a total of 456,729 dozen pairs, of cotton hosiery valued at $1,491,062 were received. This compares with 523,928 dozen pairs, valued at $1,801,901 for the corresponding period of 1925. On wool hosiery there is also a decline in imports. The total for the 11 months ending November amounted to 358,015 dozen pairs and the valuation $2,549,423. This compares with 499,230 dozen pairs, valued at $3,491,792 in 1925.

Underwear Profits Restricted but Volume Fair

Direct Selling Increases, but Jobber's Place in the Scheme of Distribution Recognized Provided He Functions Properly—Possibility of Change from Hand-to-Mouth Buying—Development of Southern Manufacture of Heavy-Weight Goods—Changes in Merchandising Policy

KNIT underwear manufacturers passed through a year of restricted profits but with a volume that compares favorably with the last few years. It is highly probable that the aggregate business for 1926 will total more than 1925 but the individual orders have been small and for immediate or nearby delivery. Apparently there has been no opportunity to persuade the trade to operate for the future and the buying has indicated a continuance of hand-to-mouth operations for which there seems to be no remedy in existing conditions. It must be admitted that this character of buying has resulted in small inventories with the jobber and that the year 1927 starts on a much more satisfactory plane from the buyer's standpoint. In all probability inventories at the end of 1926 were the smallest in the history of the business and evidently the jobber intends to keep them small.

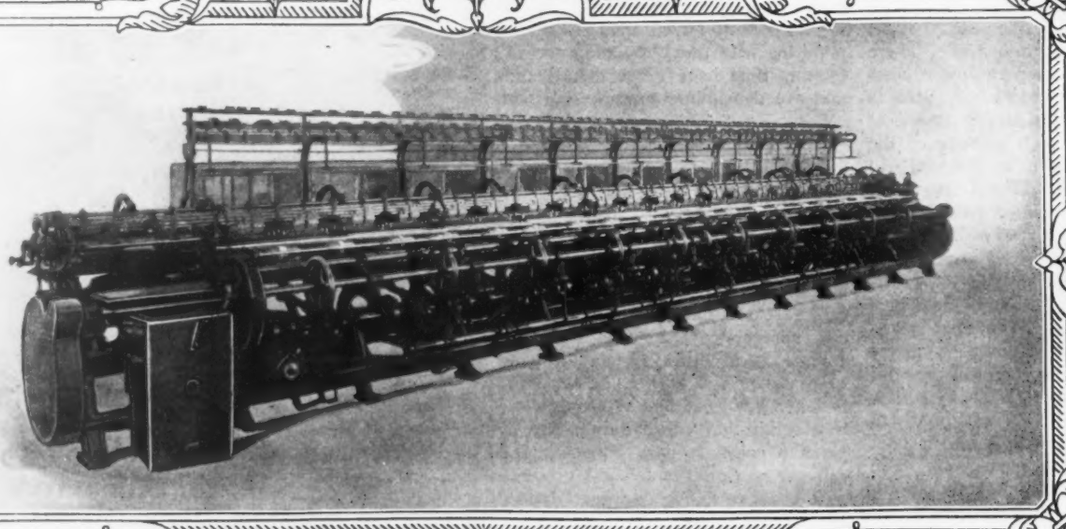
Tendency Toward Direct Selling

In spite of the statements of underwear selling agents regarding their willingness and even desire to cooperate with the wholesaler, as he insists on being called, there has appeared during the year just closed an increasing tendency to go direct to the retailer. This does not mean that the entire trade can market their product in this way. It is appreciated that it costs more and means entire revamping of selling organizations, with credit risks and interest on stock, etc. that are certainly elements for earnest consideration. But more than this the general trade realizes that they need the jobber in order to operate their mills economically and profitably. Without advance business it is impossible to establish a basis on which to keep machinery moving.

But while recognizing the need of the jobber in the scheme of distribution it is also appreciated that if he does not function in providing advance orders something must be done to fill the void. Notwithstanding the declaration of jobbers that they are providing the manufacturer with the basis for operating through advance orders it is generally admitted that less and less business for forward delivery is being secured from the wholesaler. Of course the latter is obliged to place his orders for shipment in advance but the period between the giving of the order and the delivery date is being lessened every year. In other words, the wholesaler is refusing to carry stock in very many instances. Many go so far as to direct that goods be shipped to their customers and do not buy until they have sold. This practice is becoming more and more general and is attributed in many cases to the dominance of the merchandise manager whose apparent aim is to approximate the condition where he can do business without merchandise.

No Urge to Buy Ahead

There is no doubt that the year just passed has furnished little incentive for the jobber to anticipate his requirements. Every time he has bought he has found that by waiting he could have operated on a lower level and has naturally discovered that his competitors who have pursued this dilatory course have benefited by their conservative action. This does not make for satisfactory conditions with the manufacturer who is obliged to buy his raw materials and pay for them before he receives any knowledge as to the character of season's buying. In other words, he is operating on a precarious basis which may be most unprofitable when margins for the season are estimated. The turn of affairs at the end of the year would seem to forecast a probability of improvement in this regard. The wholesaler himself admits that the basis for operations has been stabilized and that the possibilities of depreciation on merchandise which he may buy for his future requirements is minimized. Very little likelihood of lower prices on underwear is considered. On the other hand, economic conditions point to the development of higher price levels with raw material on an ascending scale and the necessity of con-



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forming manufactured merchandise thereto.

Move for Later Openings

At the end of the year there was a concerted effort on the part of underwear buyers to influence manufacturers to agree upon later openings than have been the case in the past. This applies particularly to next fall's merchandise, especially in heavyweight ribbed and fleeced underwear. With the exception of two or three of the larger southern manufacturers specializing on heavyweight ribs, openings were delayed until after the first of the year. In the case of these important factors in the industry the argument was advanced that in order to provide for the continuous operation of plants it was necessary to secure orders in December that would carry them over January and February, thus enabling them to make a reduction in price. Otherwise they argued that it would not be possible to figure as low a level as though they were operating on full-time schedule. The consequence was that these few lines were opened early in December and apparently a very fair business was taken, at least enough to keep mills going during the first month of the current year. Northern mills as a rule did not open until after the turn of the year, thus cooperating with the wholesaler who argued that to open before inventory would disturb their business with the retailer and might necessitate a reduction in price which would lessen their volume of profit.

Requests for Late Opening

At the jobbers' meeting in January resolutions were passed requesting manufacturers to delay their fall openings, making December 15 the earliest date at which they felt it was desirable new lines should be shown. While sellers have agreed that on the declining market a late opening was of advantage they felt it both unwise and impossible to say what they would do for another season because conditions might be so altered that the buyer himself would desire an early opening. It is easy to imagine a market tendency that would make it advantageous to the buyer to purchase his underwear lines at an earlier date than in other years. If prices should be on an ascending scale early buying would be more economic. Therefore it is plain that no general plan to establish a specific date on which fall lines of underwear should be shown can be adopted. Nevertheless the buyer has felt that he has gained a moral victory in the general acceptance of the principle of late openings and in the agreement of manufacturers to cooperate with him in this matter.

Trend of Demand

Throughout the entire year business has been conducted as though there were no certainty as to what the future had in store. Perhaps buyers could not be blamed for this attitude as it proved that their position was a logical one in view of declining prices. It has meant that the cost of selling has been materially increased. Those mills and selling agencies that have been able to secure a volume of business equal to 1925 have been obliged to be on the job constantly and consistently. This has meant additional traveling expenses and in instances a larger force of salesmen. On the other hand those agencies that have been willing to await the arrival of the buyer in the local market have found that such procedure has reacted decidedly against the status of their business. There are many who are discouraged over the situation but at the same time it is encouraging to note in a number of cases a very optimistic attitude not only toward the future but with regard to the past year. This is made possible only through most persistent effort and a following of the slightest clue that indicated business. Being constantly in touch with buyers is more and more necessary under existing conditions.

Unusual Selling Efforts

The inability or unwillingness of the jobber to canvass his trade thoroughly and the discrimination in many instances against lines of underwear through the operation of general salesmen who carry all lines of merchandise and who frequently discriminate in favor of the things easy to sell, have led to practices that have not in the past been thought necessary but which have proved in a good many cases to be very effective in producing a better distribution than could have been done by the jobber himself. In not a few cases salesmen or even executives of selling agencies have made a demonstration for the buyer with certain customers from whom he had not been receiving his usual volume of business. Almost universally these efforts on the part of primary agencies have shown there was business to be had, frequently at the very door of the wholesaler himself who, possibly because of his nearness to a specific retail prospect, did not have the perspective which would enable him to make a satisfactory canvass. There has also been an effort to show the jobber that his profits could be enhanced and his business more scientifically done were he to concentrate his efforts on territory contiguous to his home office. In other words, 1926 has demonstrated the futility of the wholesaler spreading himself out too thin.

An Economic Survey

This feature has been recognized by manufacturers and congnizance has been taken of the economic necessity of restricting buyers' territory in the approval of an economic survey under the auspices of the Associated Knit Underwear Manufacturers of America. The idea of this activity is that it will provide a visual demonstration of the territories which can best be served by a local distributor. The formation of these divisions is based upon sources of wealth and concentration of poulation in a specific area as well as economical means of transportation. The latter is especially an element of the situation and is coming to be recognized by the manufacturer as well as the distributor. This is particularly true in the case of nationally advertised lines. Through careful check-up manufacturers without the definite information which such a survey would furnish have already appreciated that they are spending relatively too great an amount to reach a thinly populated or unprofitable territory, while other areas that might be more prolific in business and more economically cultivated have been neglected.

But the prime objective in such a survey would seem to be the better control of distributing agencies. A development in merchandising that has not been worked out has been tried in certain other divisions of the textile market with apparent success although an insufficient period has elapsed to speak definitely about its permanency. This plan comprehends the appointment of certain distributors to whom goods are consigned and who have the exclusive agency within a certain territory. Such a development might very easily be worked out in underwear with the successful consummation of the survey above referred to. It provides a distinct boundary established by economic regulation for the area in which the distributor can most efficiently work. It is furthermore an intensified method of regulating the distribution of merchandise which is a matter for general consideration these days. Much benefit is expected to accrue from the efficient working out of this plan.

Heavy Ribbed Development

The year has seen a further development of heavy ribbed goods with increased prominence given to goods made in the South. The dominance of large plants in southern territory has been further established and again opening has been awaited by the rest of the trade before announcing their own quotations. Nor has there been this year the wide spread between northern and southern lines that has been evident in the past. In other words, New York State manufacturers have more closely approximated the quotations of the southerner and in one or two instances have gone them one better notwithstanding the higher cost of production in the North and other handicaps that have prevented successful competition. There has naturally been a decline in price of merchandise, due to the lower cost of raw material. With 14 lb. ribs available at $7.50 the market is regarded as on the lowest possible level and the buyer is placed in a position where he apparently cannot lose by operating freely. Whether there will be any change in his attitude or not remains for the next few weeks to determine. With reference to the larger buyers there seems to be more of a willingness to place a larger proportion of the season's requirements.

There has also been a change in the method of selling ribbed goods on the part of large producers. Last year the plan was to divide delivery dates into three periods, basing prices accordingly. It was realized that this method would be changed for the current season and it was anticipated that a single date for delivery would be established, with a flat price made therefor. But at the last moment plans of manufacturers were changed and when new prices were announced it was discovered that these prices would apply to two periods only. Naturally such a method of merchandising favors the larger buyer, who receives the favorable price for taking in goods early. Naturally there is more or less criticism on the part of the smaller operators, who cannot afford to hold their merchandise to an extent that would be demanded if they took advantage of the early delivery date, but on the whole it is believed that the new plan has worked out to mutual advantage and that the trade has accepted it philosophically.

Will Methods Change?

Some plan for altering the present method of hand-to-mouth buying would be gratefully received by sellers. Various suggestions have been made, none of which apparently has met with universal favor, and the majority of which are regarded as impractical and uneconomic. The suggestion in one quarter has been that fall dating would accomplish the desired result. This would mean a reversion to the method of commission houses in vogue before the war. There are those who feel that such an offer to the buyer would involve a freer anticipation of requirements and greater possibility of operating profitably on the part of the manufacturer. Of course a general acceptance of this plan would be impossible because of the inability of certain mills to finance themselves under such a procedure. It might also mean that if there was a general acceptance of the idea that certain accounts now being sold direct would be taken over by commission houses who would finance their operations on this basis. It is pointed out however that business is being done in this manner today, but that it is not producing increased operations by the buyer nor is it meeting with his favor as a general thing. The buyer does not want to carry stock even though he does not have to pay for it until close to the time when he sells it. In the final analysis it is believed that the only condition which will bring about any material change in the method of distributors' operations will be a scarcity of merchandise. No one foresees such a contingency in the near future for while manufacturers are adjusting themselves to the method of buyers' operations and are not accumulating the stock they formerly did, it is realized by the buyer that with a potential capacity much greater than the actual needs of the country there is not likely to be any merchandise famine and that goods can be obtained practically as desired. Of course one other condition, if it materializes, may alter the attitude of the buyer toward forward operations and this is much more likely than scarcity of merchandise for 1927. If prices should radi-

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cally advance within the next few months and buyers should sense the possibility of a drastic upward move, they would for self-preservation place their orders for a very fair proportion of their season's requirements. While there is a possibility of this happening the majority feel that the improvement during the current year is more in the line of stabilization rather than of distinct upward price levels. Advances are very likely to take place but they are regarded as also likely to be moderate and to be foreshadowed soon enough to enable the buyer to take advantage of a very satisfactory level of prices.

Nainsooks and Rayons

While propaganda directed against the desirability of woven underwear because of its lack of fit and also lack of hygienic qualities has had a certain effect, yet it is a general feeling that business has equalled that of 1925, at least as far as volume is concerned. It is very likely that the majority have not realized the profit that they expected on this class of merchandise, owing to the declining market on piece goods and the uncertainty of jobbers' operations. Here again 1927 offers greater opportunity for volume business and for profitable merchandising than was the case last year. The purchase of cloths on today's basis would seem to indicate a possibility of profit that has been absent from such operations in the past. There seems to be little likelihood of any material decrease in the volume of business at this end. A possibility which has been tried during the year and which has worked out with a fair amount of success has been the combination of knit shirt and athletic nainsook drawers. Further expansion along this line seems likely, judging by the amount of business done by those who have entered this class of manufacture.

General belief as to the expansion of rayon underwear is expressed, not only by manufacturers but by wholesalers as well. A good many unsatisfactory experiences have been related as to the undesirability of merchandise turned out and its non-acceptance by the consumer. It is realized that many mistakes will have to be made and are being made until the development in this comparatively new field approximates perfection. Manufacturers are beginning to realize it is necessary to exercise a very discriminating supervision of the character of rayon used. They also appreciate that certain types which may be satisfactory for one line are not desirable for another. The future of this business is more or less of a closed book but it is regarded by the majority as capable of satisfactory development. Of course the declines in fiber during the year have had a more or less unsettling effect, but the majority regard the situation as decidedly stabilized and do not look forward to any material change at least for the first six months of this year.

Style in Underwear

Through association effort a demand for style underwear has been attempted. Although hailed as a novelty it is pointed out by those who have had long connection with the underwear trade that lines of printed underwear were shown 25 years ago. That they did not go then is no evidence that they will not be accepted today, but there is no general belief that they will form an important feature of this year's underwear sales. It is natural that a matter of this kind should meet with more or less sales resistance and skepticism on the part of manufacturers. The argument in its favor is that it produces an eye appeal and makes possible more window displays, thus attracting the consumer. In the final analysis it would seem as though the success of style underwear would depend upon creating a vogue for style underwear. In other words if it is the fashion to wear underwear printed either with stripes or floral decorations this merchandise is going to be taken by the consumer but it has first to be established that the ultimate consumer will regard it as the proper thing to buy and use. The same statement has its application to the continued fight between the proponents of knitted underwear versus woven.

Indication of Sweater Revival

Buyers Discover They Should Have Operated More Liberally on This Class of Garment

INDICATIONS for the year 1927 would seem to point to a much greater certainty as to the place of the knitted sweater than was in evidence in 1926. This uncertainty last year did not extend throughout the entire 12 months but when the year started many buyers expressed their belief that they did not care to handle sweaters and in instances outerwear departments were absolutely discarded. Of course this meant a very hesitant character of buying by the great bulk of wholesalers and it also meant inability of manufacturers to operate their plants with any degree of certainty. It is probably fortunate for the industry as a whole that the majority of manufacturers took the bull by the horns and closed their mills rather than accumulate a stock which they had no basis for selling at a profit. The effect of this unwillingness to carry the burden for the jobber became apparent last fall. By that time the buyer began to realize that sweaters had not gone out of existence and to appreciate the mistake he had made in not supplying himself with a moderate amount at least. The consequence was that a rush for merchandise which could not be satisfied and which meant an unsatisfactory condition not only for the buyer but for the manufacturer as well, materialized as fall commenced. Of course deliveries were wanted all too quickly and the explanations of the selling agent concerning inability to make shipment as the buyer desired were regarded as insufficient and based on apparent lack of manufacturing ability. Such an attitude on the part of the buyer is always the case where he is at fault and tries to throw the blame upon the other fellow.

Is Lumberjack Passing?

The development of the lumberjack, especially in the West, was one of the features which made for uncertainty by the buyer that sweaters would continue. In fact the woven garment was thought likely to supersede the sweater to such an extent that the latter garment could be discarded as a staple product. There is no doubt that woven lumberjacks will continue to be made and sold but their course seems to have been run as a dominant factor in the outerwear industry. The experience of certain buyers with stocks has been far from satisfactory and the result has been that they have turned to the knitted sweater as a remedy for their situation. The lumberjack for adults has never been regarded as of universal appeal in the East nor do climatic conditions in the South make for its large use. Nevertheless buyers in both sections early last year seemed to be obsessed with the idea that this was the only class of outerwear garment for men that they could sell. Naturally the knitted sweater suffered very materially, until the mistake of the buyer in thinking that the sweater no longer had its appeal was realized. Undoubtedly there are stocks of lumberjacks in the distributing field today that are acting as a retarding factor in the operations of buyers for another season but this does not alter the fact that these same buyers are willing to admit the revival of the sweater and are acting accordingly.

The Chicago Convention

A sufficient number of sellers were again willing to try the experiment of opening lines concurrently in Chicago late in 1926 to make this feature a trade movement. The idea originated with sellers who had canvassed the smaller manufacturers in the vicinity of Chicago, who added to their own product certain lines of sweaters which they bought. These sellers conceived the idea that a saving in time and effort would be accomplished if these buyers could come to a central point and select their needs from a general offering which the market had to show. The idea was developed by a comparatively few and others were drawn into the feeling that they might lose something by not being on the ground. At the end of 1925 a good many leaders in the sweater field announced their intention of not cooperating in the display of their lines at Chicago. In a number of instances the disappointing trade experienced by certain houses was attributed to this lack of cooperation and salesmen were largely instrumental in persuading houses to revert to the practice of having their lines on display at a central point. The consequence was that a very large number of sweater selling agents were represented in December at the La Salle Hotel, Chicago, and the trade were invited to make their inspection and place orders.

Sellers Disappointed

It is the general consensus of opinion that the effort was not a success. A good many went into the proposition half heartedly and their fears as to the result were realized. Only a fair number of buyers were in attendance and the early opening was not in accordance with the ideas of the jobber. Lines were opened in New York the week before they were shown in Chicago but the trade were very evidently not ready to operate. The result was a disappointing volume of business and also a determination by many who were responsible for a liberal showing of samples in Chicago, not to repeat the experiment. Salesmen who covered their territories before the first of the year had a fair business but the real activity did not commence until buyers came to New York to attend their annual gathering.

Those who have studied the situation carefully have come to the conclusion that a competitive showing such as was made in Chicago militates against the maintenance of prices by first hands. The various rumors that were developed as to particular lines of goods caused uncertainty by others who were afraid that their competitors were stealing a march on them, with the result that they were influenced to reduce their prices. This would not have happened in all probability had the selling agent been able to maintain a calm review of the situation in his own office without the conflicting reports received continuously about competitors' activities. Therefore it is not hazardous to prophesy that the Chicago convention is a thing of the past for this year at least and probably for a much longer period. The suggestion has been made that a simultaneous opening be staged in New York at the end of the year though it is not likely that any one place will be selected where all samples will be congregated. Lines may be opened on a certain date but selling agents will show them in their offices in all probability and also wait until there is some assurance that the buyer is ready to operate.

Staple Lines Favored

With a demand developing in the fall there appeared to be a distinct trend toward staple merchandise and this movement has continued to date. Manufacturers have been cautioned to include a very fair representation of staple garments in their lines and the result has been a very satisfactory showing of high-class merchandise that has appealed to the buyer. The latter's opinion regarding staples has also strengthened materially. It is reported that the volume busines which has been taken is on this class of garment and the market is tending in this direction.

Efforts for Specific Types

A movement was inaugurated last year by certain leading agents to re-

strict the number of styles in sweaters and to agree if possible upon certain leading types that would relieve the buyer's mind of uncertainty as to what would be largely demanded. It was felt that one reason why the buyer was not more enthusiastic about the generic term sweater was that he had so many different lines to choose from of varying style that he could not make up his mind which he should buy. If by concentrating on one leading type agents could impress the buyer that this particular line would be stressed and featured it was felt that a degree of this uncertainty would be eliminated. Therefore a woman's buttoned sweater was selected as the logical garment that would be featured by the selling trade generally. Of course it was not considered that the putting forward of this type of garment meant the removal of other lines from consideration but it was hoped that it would give an impetus to the whole market and leave the buyer with the impression that manufacturers and their agents were agreed on what was the desirable merchandise. It is believed that a measure of success has been attained in this direction. It should not be stated that the women's buttoned sweater has led everything in the field but the volume of business done has certainly proved the desirability of the undertaking and will probably be followed in the future.

Bathing Suits Moderate

It is certain that the bathing suit has not developed as satisfactorily as could be desired. The year 1926 has again demonstrated that there is an over-production in this class of merchandise and that buyers are proceeding cautiously and with the feeling that their former operations were such as to lead them into an unfavorable situation. Naturally there was a reduction in price when lines opened for the coming season, especially in cotton goods. While the reduction was more moderate in wool goods because of the status of the raw material there was still a very marked change from last year, based on favorable purchases by manufacturers of wool and yarn. Today it is probable that these prices show a very small margin of profit figured on replacement cost. Also it is declared that the buyer is not satisfied that the reduction has been made and is proceeding cautiously. If there should be any evidence of an advance it is expected that this possibility would bring buyers into the market with much more interest in offerings.

Selling Agents Unite

As the current year opened the announcement was made that knit goods selling agents had formed an association of their own, with special emphasis on outerwear. This organization has not progressed far enough nor been in existence long enough to demonstrate its possibilities for usefulness. Offers have been made however of committees representing this association which would be glad to meet with buyers' committees to determine on desirable dates of opening and other matters for the best interests of all concerned. It is felt that the possibilities of this association are great and that the development of the trade can be accomplished in a much better way than by individual effort. It also gives the buyer a basis of knowledge as to the methods to be pursued in the merchandising of lines with increased certainty as to his reaction thereto. Progress of the organization will be watched with interest not only by the wholesaler but by those in the organization and those who are standing aloof to determine the essential benefits.

Jute and the Textile Trade

(*Continued from page* 155)

bidders. The award for the jute twine made saved the Government $60,000.

How the Jute Crop has Grown

The final jute forecast figures for 1926 issued by the Indian government last fall, placing the crop at 10,880,600 bales, are said to be the largest indicated crop on record. The fact that forecast figures have averaged 17% below the actual outturn over a 12-year period suggests that the actual crop this season may exceed 12,420,000 bales, though most of the trade doubts such a maximum.

The record of the Indian Government in forecasting acreage planted to jute is something to be proud of. The following table shows an error of less than 1% over a 12 year period:

	Gov. Prelim. Estimate of Acreage.	Gov. of Ind. Final Est. of Acreage.
1914–15	2,278,276	2,358,737
1915–16	2,365,151	2,377,316
1916–17	2,615,816	2,686,000
1917–18	2,659,000	2,694,000
1918–19	2,490,699	2,497,214
1919–20	2,749,000	2,821,100
1920–21	2,502,000	2,502,000
1921–22	1,536,806	1,518,400
1922–23	1,456,000	1,455,806
1923–24	2,297,520	2,312,685
1924–25	2,732,703	2,736,500
1925–26	2,913,813	2,926,254
Total	29,596,784	29,886,012

The following gives the Indian government's jute crop estimate and the actual outturn figures for 12 years, showing the almost consistent underestimate:

	Gov. Estimate of Crop.	Actual Outturn.
1914–15	10,500,000	10,511,822
1915–16	7,428,000	7,605,470
1916–17	8,366,131	8,776,108
1917–18	8,919,918	8,786,000
1918–19	7,159,180	7,948,000
1919–20	8,636,200	8,700,000
1920–21	6,062,000	8,292,000
1921–22	4,152,000	8,292,988
1922–23	4,336,828	6,385,000
1923–24	7,095,024	9,434,973
1924–25	8,044,892	9,263,975
1925–26	7,851,328	9,535,914
Total	88,552,401	103,532,250

The Government's preliminary estimate of acreage for the current crop was 3,600,000 which is almost 20% greater than any previous acreage figure for 12 years. The trade believes that the world can probably absorb 11,500,000 bales of jute on a reasonably low price basis.

Imports of Jute and Burlap

The imports of raw jute into the United States for the 11 months ended November, 1926, amounted to 53,938 tons valued at $12,797,860 which indicates an average value of a little over 10c per pound. The figure quoted in January on first marks f. o. b. New York was around 7½c. For similar 11 months in 1925 jute imports totaled 54,415 tons valued at $10,212,110, indicating an average value at that time of about 8½c per pound.

Total burlap importation for the 11 months of 1926 was 557,294,297 lbs. valued at $77,357,049, of which 489,308,400 lbs. ($66,693,585) came from India, 49,099,006 lbs. ($7,795,814) from the United Kingdom (largely Dundee goods) and 18,886,891 lbs. ($2,867,650) from other countries. The figures for 1925 show about the same quantities.

Jute bags or sacks imported for the 11 months of 1926 totaled 43,834,726 lbs. valued at $5,626,458, with the 1925 figures about the same. Waste bagging imported in 1926 was 58,168,877 lbs. ($2,738,652), a great increase from 1925 when comparable figures were 11,798,887 lbs. ($337,954).

An approximate yardage figure representing United States takings of Calcutta goods is not far from 1,000,000,000 which is figured about on the basis of 80,000,000 yards monthly.

Cotton—Copper

(*Continued from page* 132)

appeal to the consuming public. In both materials, there is a story that can be told over and over again and yet will never grow stale.

Results of Campaign

"Today the United States is foremost among the nations of the world in copper production, while Chile, ranking second, contains the largest mine and the greatest known copper reserves which are largely American owned. From the copper mallet used by the ancient tribesmen, we find the metal many centuries later serving mankind as the principal conductor of electric power, which in turn furnishes the largest proportion of heat and light for all purposes. In fact, there is scarcely a basic industry in the world today that is not dependent upon copper—and the same is true of cotton.

"Prior to the World War, the consumption of copper in the United States had never reached one billion pounds, and although there was a large increase to meet the military necessities of 1914 through 1918, we find that the domestic consumption during 1926 was far in excess of any previous year uninfluenced by war or inflation. More important still—from the standpoint of associational activities—it is significant to point out that the consumption of copper last year was 1,800,000,000 lbs., or double that of 1921, the year the Copper & Brass Research Association began its activities.

"There are, of course, certain features of the copper program which do not apply to the cotton situation; and similarly, there are certain problems which appear to be inevitable parts of the operation of The Cotton-Textile Institute but which did not seem necessary to the work of the Copper & Brass Reseach Association. Just to cite one example, it is felt that the cotton manufacturing industry is in need of definite knowledge regarding methods of determining costs. The Copper association has only 46 units in its membership and these are concentrated geographically. We already have 428 members in The Cotton-Textile Institute and the number will probably increase considerably. The cost problems of two industries constituted so differently are naturally not similar, particularly since there are not nearly so many factors which go into the former branch of manufacture as into cotton fabrication.

Exports

"The Copper & Brass Research Association, now in its sixth year, has undoubtedly become a fixture within its industry. The success of its activities in domestic markets has been such that the industry is now turning its attention to the possibilities offered in foreign fields. This is a logical development of the activities of any industrial movement of international importance. Profiting by the experience of other industries, The Cotton-Textile Institute has incorporated in its charter a specific provision for the study of foreign markets.

Predicts Sound Results

"Thus it will be seen that there are phases of the Copper & Brass Research Association movement which can be applied to our Institute. It is always difficult to predict in advance the results of any such broad undertaking but I am confident that, given three years of intelligent administration, such as is assured by the election of Mr. Walker D. Hines to the presidency, and faithful cooperation on the part of its members, The Cotton-Textile Institute will justify the painstaking work of those men who have made the organization possible. I predict further that, at the end of that period, the results will be fully deserving of a continuing and permanent organization."

1927 Should Be a Profitable Year

By John T. Woodside

President, Woodside Cotton Mills Co., Greenville, S. C.

I believe that the year 1927 will be a profitable one for the textile industry, as well as for almost every other line of business.

Stability Keynote of Domestic Dye Industry

Year Was Characterized by No Disturbance, and Market Was on Basis Which Inspired Confidence in Users—Increasingly Competitive Condition Makes Producers' Situation a Difficult One—Possibilities of Future Ramifications Represent Highlight of Development

THE chronicler of the domestic dye industry for 1926 has a rather difficult time of it. In contrast with the war and post-war years, when there was always something happening to write about, the last year has been devoid of any outstanding development which might be made the key-note of a review. There is not even a good fight to talk about.

As has been intimated before in these columns, however, the absence of news in this particular field must be construed as good news. The industry has settled down to a stabilized basis, with a minimum of cause for complaint on the part of the consumer but with possibly a less fortunate situation facing the producer who has experienced a continuation of the keenly competitive market which has been in existence during the last few years.

The stability referred to before has been reflected in dye prices. Despite the fact that competition has occasioned periodic uncertainty due to attempts on the part of holders to get business, the level has been in the main one which has inspired confidence on the part of users. The tendency has been slightly downward just as has been true each year for the last nine years. This has been due partly to increased efficiency in manufacturing and partly to the increased competition referred to previously.

Dye Production

Naturally the very difficult year experienced by textile manufacturers affected dye consumption and contributed to this competitive phase. As far as its effect upon the total amount produced is concerned, it is difficult to draw conclusions at this time. The Tariff Commission's report is the only source of definite information on this matter and the 1926 report will not be available until somewhat later in the year. From best opinion in the market, it seems probable that the output did not represent a material change from that of 1925 and that if any difference existed it was toward an increase. However, at this time last year the prediction was made in the trade that the 1925 production would be the same as that of 1924, whereas actual figures showed an increase of approximately 25%. This indicates the difficulty of abiding by estimates.

Incidentally the 1925 report was a particularly illuminating one. The output for that year of 86,345,438 lbs. was the greatest in the history of the domestic dye industry with the sole exception of the year 1923 when 93,667,502 lbs. were manufactured. The price curve showing a steady decline from the average price per lb. of $1.26 in 1917 to $.47 in 1925 tells a story in itself because it reflects the competitive conditions in the industry and indicates the extent to which consumers have profited by the domestic development.

Similarly the record of imports of dyes for 1926 indicates the increasing extent to which American producers have been supplying domestic needs. Preliminary figures showed that 1926 importations declined 9% in poundage from 1925, the total amount brought in being only 4,615,551 lbs.

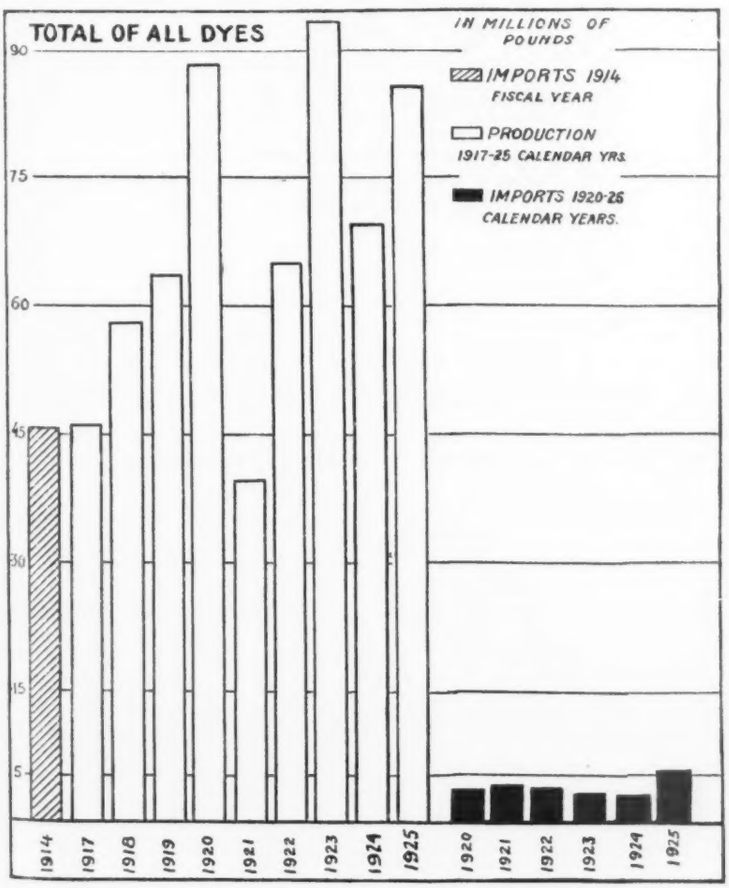
So far as new types developed are concerned, the announcements made by individual companies during 1926 indicate that the work on the faster colors and on specialties and refinements has continued.

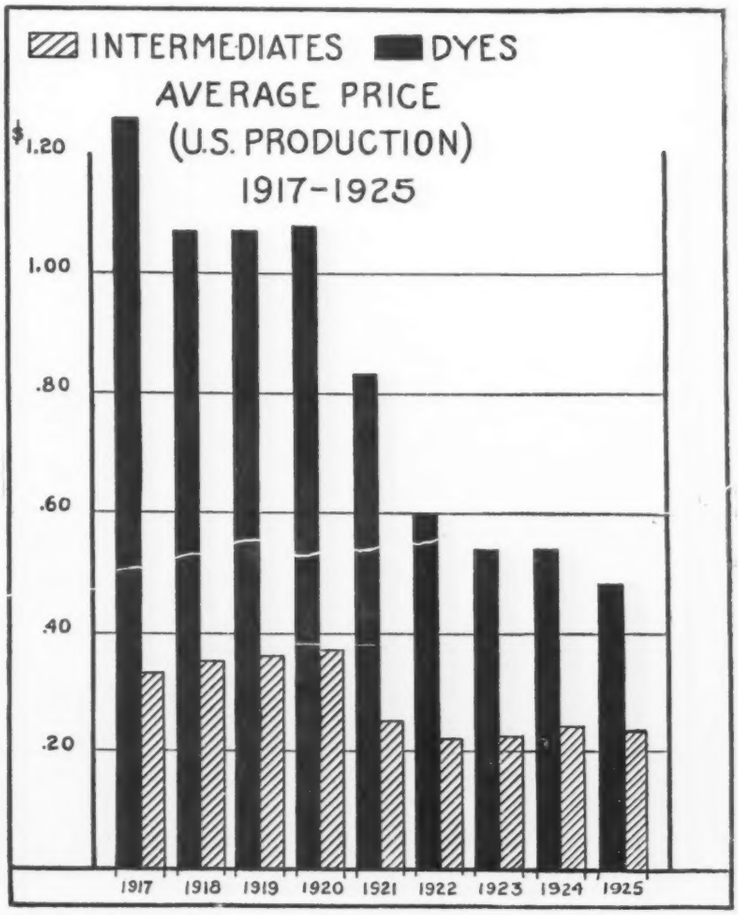
Foundation's Victory

The most important news event in the industry last year was the announcement of the final victory won by the Chemical Foundation, Inc., when the United States Supreme Court in October upheld the private sale in 1919 of German chemical and dye patents, trademarks and copyrights, seized during the war, to the Foundation by Francis P. Garvan, Alien Property Custodian, for $271,850. This disposed of a litigation which had been in the courts for a long time and is regarded generally as a welcome development since it enables the Foundation now to devote its time and money, if any, to the encouragement of research in chemical and allied lines, as provided for in its charter.

The Broad Future

If actual developments in the dye industry of late have been limited, its ramifications and its bearing on our future national life appear to have no





These Two Charts from the U. S. Tariff Commission's 1925 Dye Census, Show Graphically the Development in Domestic Dye Production and the Steady Decline in Price of the Products

Chemical aids to PRODUCTION

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Copper Sulphate
Epsom Salts
Formaldehyde
Formic Acid
Glauber's Salt
Naphthalene
Oxalic Acid
Potash, Caustic
Potash, Carbonate
Potash, Bichromate
Potash, Oxalate
Potash, Bioxalate
Potash, Permanganate
Sodium Bichromate
Sodium Perborate
Sodium Prussiate
Sodium Sulphide
Sodium Stannate
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Zinc Chloride
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All of excellent solvent properties depending on particular conditions.

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limitations. Probably the best summation of this phase of the industry can be found in the address delivered by Irenee du Pont, vice-chairman of the board of E. I. du Pont de Nemours and Co. before the American Chemical Society at its golden jubilee meeting in September. Mr. du Pont traced the developments in all branches of industry which have been made possible by our advancement in synthetic organic chemistry, and hinted at some of the further and more far-reaching possibilities which we may expect. His talk was a consolation to those enthusiasts whose belief in the importance of the dye industry has laid them open to the charge of fanaticism; and a revelation to those who have not seen in this development a movement of national significance. At any rate such a visionary statement coming from a practical business man could not fail to be an inspiration to everyone.

Singularly enough, the other outstanding phase affecting the future of the industry was touched upon at this same meeting when the chemists who attended the sessions of the Division of Dye Chemistry emphasized particularly the need for continued effort in the direction of fundamental research. Their insistence on this need was particularly interesting to textile manufacturers who are today sensing the necessity for such basis investigation within their own field.

Fortunately the dye industry is now large enough and firmly enough established to furnish the financial incentive for such development and it is probable that the next decade will make the accomplishments of even the last remarkable ten years seem insignificant.

A New Declaration of Dye Independence

Color Section of U. S. Bureau of Chemistry Discovers New Intermediates for Vat Dye Production—Follows Successful Synthesis of Phthalic Anhydride With Short Cut in Dichlor Anthraquinone Manufacture—New Use of Naphthalene—Vat Dyes Have Bulked Large Imports

By Irvin D. Foos

WASHINGTON, D. C.

THE insistent public demand for fast-dyed fabrics, coupled with the severe competition from abroad in high-cost colors, gives the utmost significance to the development of a new potential source of vat dyes by the Color Section of the U. S. Bureau of Chemistry. The Color Laboratory's achievement consists in adapting to vat dye manufacture a cheap and plentiful material not previously used as an intermediate, and the probable creation of a new series of vat dyes.

Value of Vat Dyes

There has been a conspicuous increase in recent years in the use of vat dyes because of their high fastness to light, washing, perspiration and the chlorine bleach used in the laundry. American manufacturers now produce vat dyes of brilliant color and lasting quality as the result of processes developed by American chemists for making cheaply and of remarkable purity, dye intermediates formerly obtainable only in Germany. The air oxidation process for making one of these essential intermediates, phthalic anhydride, was discovered in the Color Laboratory, and is the basis of the new development worked out there.

The vat dyes, because they are fast and durable, are especially adapted for cotton goods. Vat-dyed yarn also is becoming a factor in the silk industry. In 1914 no vat dyes were manufactured in the United States and 1,945,304 lbs. were imported. In the development of the domestic dye industry during the last decade manufacturers first concentrated on bulk dyes. More recently, however, they have devoted considerable effort to many specialties. As a result of this specialization, the year 1925 showed marked progress in the manufacture of new dyes, including vat dyes. Last year's output of vat dyes, other than indigo, established a record, with a total of more than 2,600,000 lbs., an increase of 43% over 1924, according to the U. S. Tariff Commission's census.

Table I—Domestic Production and Imports of Vat Dyes

Year	Production Pounds	Per cent of Total Dye Production	Imports Pounds	Per cent of Total Imports
1925	2,608,361	3.0	2,416,890	46.39
1924	1,821,319	2.65	1,493,851	49.43
1923	1,766,383	1.89	1,207,554	38.98
1922	1,075,992	1.67	1,548,519	38.89
1921	345,152	.88	1,045,370	24.59
1920	1,159,868	1.3	761,363	22.4

Vat Dyes 3% of U. S. Production

Despite this gain, only 3% of present domestic dye production consists of vat dyes. These dyes meet special requirements of the textile industry and are not consumed as yet in large quantities, although the increasing use year by year of fast colors will tend to correct this situation. The relatively small individual poundage consumption increases the cost of manufacture by the complicated processes necessary to their production.

The German dyes now are able to step over our tariff barrier and the competition from imported colors of high-cost types is pronounced. Domestic production and imports of vat dyes, excluding indigo, in recent years are shown in Table I.

It will be seen from the above that the demand for fast colors has brought up imports of vat dyes at the same time that it has stimulated domestic production. An important factor also was the statutory reduction in the tariff Sept. 22, 1924. According to the Tariff Commission, the ad valorem duty is more effective than a specific duty on high-priced dyes. The reduction from 60 to 45% in the ad valorem duty, while the specific duty remained the same at 7c a pound, consequently has resulted in a larger importation of vat dyes.

New Syntheses

Both foreign competition and tariff tinkering begin to lose their threatening aspect, however, in the light of the continued progress being made by the Color Laboratory in the development of synthetic processes. The Color Laboratory now has followed up its success with phthalic anhydride and has put it to work in combination with other materials.

One new source is orthodichlorobenzol, a chemical waste remaining from the manufacture of paradichlorobenzol, a disinfectant and an insecticide. Experimentation in the Color Laboratory has revealed that the orthodichlorobenzol can be utilized in combination with phthalic anhydride to form dichloranthraquinone, and as a result may find commercial use as a vat dye intermediate. The waste elimination accomplished by utilization of orthodichlorobenzol will be realized when it is known that in the production of practically 2,000,000 lbs. of paradichlorobenzol last year, nearly 1,000,000 lbs. of orthodichlorobenzol also were produced, the ratio being 65 parts of paradichlorobenzol to 34 parts

The Experimental Farm of the Department of Agriculture at Arlington, Va. The Color Laboratory Is the Building at the Right. In the Background, on the Other Side of the Potomac River, Is Washington

58% Soda Ash — 76% Caustic Soda
Modified Soda — Special Alkalies
Bicarbonate of Soda

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of orthodichlorobenzol. Of this 1,000,000 lbs. perhaps 5% was used.

Research in the Color Laboratory also has shown that dichloroanthraquinone can be used in making alizarin, but this process is not regarded as commercially practicable.

Another possible source of vat dyes is naphthalene, used instead of benzol, in combination with phthalic anhydride. The cost of benzol is controlled by its use as an anti-knock motor fuel instead of gasoline or in mixtures with gasoline. About 95% of domestic production now is consumed in this manner in this country and in Europe.

The use of naphthalene as an intermediate is important, on the other hand, because it promises to remain on a steady cost basis, its use as fuel being remote. Naphthalene has, however, important uses in tanning and as a moth repellant. Large quantities are imported, whereas the United States exports benzol. Last year imports of crude naphthalene amounted to 5,250,000 lbs. and benzol exports, to 58,000,000 lbs. Consequently the significance of the Color Laboratory's application of naphthalene to the vat dyes lies not in the utilization of a material, like orthodichlorobenzol, which has had no economic value heretofore, but in extending the use of a known material, already used for other purposes, for producing a new range of colors, the extent of which has not yet been determined.

German Work Along Other Lines

As the wide-spread development of phthalic anhydride as an intermediate is comparatively recent, its utilization in combination with orthodichlorobenzol and naphthalene will not run afoul of German research, which has proceeded in the past along other lines. In Germany the supply of soft pitch available from the distillation of coal tar permits the use of anthracene for making anthraquinone. Anthracene can be produced in this country, but the production of a variety of roofing and road-building compounds is preferred. Either anthracene or the distillates used in roofing and road materials can be obtained, but not both, as the hard pitch remaining after distillation of the coal tar for either is no longer capable of producing the other. The preference given to the manufacture of these other materials is justified by the fact that the anthraquinone essential to vat dye manufacture can be obtained by synthetic means through phthalic anhydride, benzol and aluminum chloride.

The utilization of orthodichlorobenzol and naphthalene in the production of vat dyes signalizes an advance in synthetic manufacture revealing to an even greater extent the importance of the success previously achieved by the Color Laboratory in working out the air oxidation process for the cheaper production of phthalic anhydride and its ultimate conversion into anthraquinone. The development of that process constituted, in effect, a declaration of independence from German sovereignty in vat dye manufacture.

The synthetic process was developed during the war when importation of chemicals from Germany was cut off. Its success on a manufacturing scale has gone a long way toward revolutionizing the manufacture of synthetic dyes, particularly vat dyes, as the new discoveries of the Color Laboratory will testify. All the phthalic anhydride now manufactured in the United States is made by the Color Laboratory's process. The domestic manufacturers now engaged in its production are E. I. duPont de Nemours & Co., Wilmington; Monsanto Chemical Works, St. Louis; National Aniline & Chemical Co., New York City, and the Selden Co., Pittsburgh.

The 1925 production of phthalic anhydride was 3,900,332 lbs. Sales amounted to 3,560,429 lbs., valued at $701,840, an average price of 20c. per pound. Before the war the price of the product made in Germany was approximately 30c. per pound, which today would be equivalent to about 53c. The product made by the Color Laboratory's process is not only relatively lower in cost, it is also higher in purity. Large quantities of this essential intermediate now are exported to Europe and more is made in England by the American process.

The Color Laboratory of the Bureau of Chemistry was organized in 1916 to help establish American independence in dyes. Not only has it done that, but it has effected a reduction in domestic manufacturing costs. As a result of the work of the Color Laboratory, the manufacturers of vat dyes now have at their disposal products with which to build up the complex molecules characteristic of these coloring matters which give the brightest shades and the most permanent colors yet made, with increased economy to every user of cotton cloths, which means the whole population of the nation.

Research Still Goes On

The Color Laboratory's research in dyes naturally bears the closest relationship to the textile industry, but there is no telling when other investigations now progressing under the direction of H. T. Herrick, the chemist in charge, will not suddenly produce results of startling significance. There is a statement of Secretary Hoover's, now familiar, to the effect that the great scientific discoveries are made in the bypaths of research when the scientist is pursuing another objective.

The Color Laboratory is seeking a larger production of the lower-boiling phenols for use in the manufacture of synthetic resins, which now produce an endless variety of products. It is also trying to find economically important uses for peanut hulls. This waste material now is consumed in stock feed and might be used in paper manufacture, but 35,000 tons of hulls a year is only a drop in the bucket as compared to the raw material demands of these industries. The Color Laboratory also is doing continuous work on food colors and on bacteriological stains for identifying the micro-organisms that produce disease. Before the war these stains, like the vat dyes, could be obtained only from Germany. Because the volume of the business is small, commercial concerns cannot well afford the basic research necessary to develop this phase of dye chemistry. Yet its development is essential in a country which aims to establish a complete dye industry independent of foreign nations. Another investigation, which is still in its infancy, looks toward the production of useful organic compounds, chiefly organic acids, by the action of various organisms on solutions of dextrose.

Creation of Color Laboratory

Creation of the Color Laboratory was brought about by the tribulations of the chemical and dye industries caused by the war. Congress heard the acclaim for establishment of a truly domestic industry and in 1916 authorized an appropriation of $50,000 "for investigation and experiment in the utilization for coloring purposes, of raw materials grown or produced in the United States." In the years immediately following, the widening scope of the Color Laboratory's work clearly demonstrated that it had outgrown the original conception and the 1921 appropriation was authorized by Congress with no further instruction than that it should be expended "for investigation and experiment in the utilization for coloring, medicinal and technical purposes, of raw materials grown or produced in the United States."

The Color Laboratory is located on the Experimental Farm of the Department of Agriculture at Arlington, Va. The building is 150 feet in length and 70 feet in width. On the ground level is a technical floor, containing a wide variety of chemical apparatus, and also a machine shop, store room and boiler room. Six chemical and physical laboratories, offices, and a library are located along a gallery on one side of the building on the second floor.

Full appreciation of the Color Laboratory's contributions to the progress of the chemical and dye and textile industries rests on a knowledge of what it is doing, and the value of its research depends on the cooperation received from these industries. The wide recognition accorded to the Color Laboratory by them has been earned by the devotion of these scientists to research calculated to meet their needs.

Chemicals in Sound Position

Stability of Price Levels and Expanding Consumption Outstanding Characteristics

THE conditions of stability and confidence which have characterized the market for industrial chemistry during recent years were continued in 1926 and the year closed with most materials in a sound position and with the outlook a decidedly hopeful one.

Support from the textile industry was not as active as it might have been, owing to conditions within that field, but expanding use in other branches maintained the situation firmly.

The thorough liquidation which had been achieved in most items on this list early in the deflation period has continued to have its good effect upon the market and there has been a minimum of fluctuation to upset the ideas and attitude of consumers. Alkalies held well to their levels, and although at one time of the year there was considerable talk of over-production, the twelve months represented a decidedly satisfactory period. Similarly in bleaching powder and liquid chlorine, which in the past have been characterized by serious seasoned disturbances, the situation last year was a thoroughly sound one throughout.

The new year starts with every prospect for expanding consumption of most industrial chemicals and with a probability of price firmness. Fortunately the major items are produced by firms who have learned the importance of price stability and there is little reason to fear a period of undue inflation even if such consumptive expansion does materialize.

1926 Dye Imports Decrease 11%

Preliminary Figures Show Total Importation of 4,615,551 Lbs.—Analysis by Classes

WASHINGTON, D. C.

THE imports of coal-tar dyes during 1926 (preliminary figures) were 4,615,551 lbs. with an invoice value of $4,083,468. This represents a decrease of 594,050 lbs. or 11%, and of $553,772, or 12% less than that of 1925.

TABLE NO. 1
COAL-TAR DYES IMPORTED

Year	Pounds	Value
1926*.....	4,615,551	$4,083,468
1925.....	5,209,601	4,637,240
1924.....	3,022,539	2,908,778
1923.....	3,098,193	3,151,363
1922.....	3,982,631	5,243,257
1921.....	4,252,911	5,156,779
1920.....	3,402,582	5,763,437
1914.....	45,950,895	9,502,714

* Preliminary figures.

Table No. 1 shows the imports of coal-tar dyes for 1926 and for the years 1920 to 1925 together with the imports for the fiscal year 1914. The quantity for the year 1914 was taken from Department of Commerce, Special Agent Series 121, and the value from Commerce and Navigation. The figures for the years 1920 to 1925, inclusive, were taken from the annual Census of Dyes and Other Synthetic

HISTORY

– and a forecast

THE older heads in the textile industry still vividly recall the handicaps incident to bleaching before Liquid Chlorine was made available.

Now the advantages of Liquid Chlorine have become commonplace, perhaps. Every mill using it profits by the simplification of bleaching processes, with consequent reduction of costs—and the output of yarn and cloth gains through a softer "feel."

E B G proved itself a disciple of progress when it pioneered in producing Liquid Chlorine in commercial quantities. And now, looking to the future, E B G will continue its research and experimentation for the advancement of bleaching science.

E B G SERVICE

Includes abundant production facilities and container equipment, of course; expert engineering counsel in the use of Liquid Chlorine which would naturally be expected of the pioneer manufacturer. But beyond these a service which is much more comprehensive than the usual conception. Investigation will reveal the significance of this.

For the convenience of our customers, in addition to our plant and warehouse at Niagara Falls, we carry stocks at Providence; Long Island City; Charlotte, N. C.; Dallas, Tex.; Chicago and Denver.

NIAGARA ALKALI COMPANY E B G

Electro Bleaching Gas Co.

PIONEER MANUFACTURERS of LIQUID CHLORINE

Plant: NIAGARA FALLS, N.Y.

Main Office, 9 East 41st Street, New York

Organic Chemicals, published by the United States Tariff Commission. The final figures for the dye imports of 1926 will be published in the Census of Dyes and Other Synthetic Organic Chemicals for that year.

Table No. 2 shows the percentage of each class of dyes by application of the total dyes imported. The vat dyes percentage declined for 1926 as compared with 1925; the total imports were about 1,850,000 lbs. as against 2,418,842 pounds in 1925, while the percentage for acid dyes recorded an increase. The percentages of the total imports for other classes in 1926 recorded a relatively small change as compared with those of 1925.

Table No. 3 shows the dyes of each class according to the method of application imported in the largest quantity during 1926, together with the imports during the years 1925, 1924, 1923 and the fiscal year 1914. The 106 dyes contained in this table comprise 64% of the imports during 1926.

TABLE No. 2
Percentage of each class by application

Class of dyes	Year		
	1926*	1925	1924
	Per cent of total		
Acid	16.99	11 32	17.56
Vat	39.46	46.43	38.98
Mordant and chrome	10.77	12.33	14.63
Direct	17 28	14.57	17.01
Basic	8.78	11.66	6.81
Sulphur	3.12	2.35	3.68
Color-like and spirit-soluble dyes	1.80	1.10	0.75
Other dyes	1.80	0.24	0.58
	100.00	100.00	100.00

* Preliminary.

British Finishing Costs Too High

Tremendous Increase in These Charges Held as One of Causes of Loss of Export Trade

By Frederick W. Tattersall

MANCHESTER, ENG.

ALTHOUGH there is considerable optimism in English cotton trade circles with regard to the prospects of the industry in 1927, there is some disappointment that despite the ending of the coal dispute, demand has not so far broadened to any particular extent. The opinion is gaining ground that if we are to compete successfully against other countries our costs will have to be further reduced, and attention is again being drawn to the high charges for finishing processes.

A leading Burnley manufacturer has given me some details with regard to costs which are certainly striking. Comparative prices have been supplied to me relating to three cloths, the figures given being for September 1913, and January 1927. With regard to the first cloth, the cost of producing in the gray state as it left the loom in September 1913 was 18s 10d., the quotation today being 25s 0d per piece. The price of American cotton is now 6¾d a lb., against 7½d in 1913. The quotation for 30's twist yarn is now 12½d against 11½d and for 44's weft 12¼d against 10⅞d. The weaving price is now 5s 0½d as compared with 2s 7¼d in 1913.

We now come to the important item of finishing, the charge today being 7s 3d per piece aaginst 1s 9d per piece in 1913. The outstanding factor with regard to these figures is that whereas the cost of producing the gray cloth has increased on prewar by 33%, the increase in the cost of finishing is over 300%.

Take another cloth: In September 1913 the cost in the gray state was 22s 3d and is now 29s 3d. The weaving price is now 5s 6d against 2s 7½d. The cost of finishing, however, has increased from 3s 9d to 12s 3d per piece, while the cost of the dyed finish is now 4d per yard against ¾d in September 1913. Here we have another striking illustration of why our foreign trade is being lost. The gray cloth has increased 33%, but finishing by 230% while the dyed finish shows an increase of nearly 420%.

The cost of another cloth in the gray state in September 1913 was 20s 0d per piece against 26s 6d today. The weaving in 1913 was 2s 11¼d against 5s 8¾d today. The cost of finishing has increased from 1s 4d per piece to 6s 0d per piece, an advance of 350%.

Comparative Summary

The position with regard to these three cloths is given in the following table. It must be remembered that the cloth cost is for the goods in the gray state as they come from the loom.

	1913	1927
	s. d.	s. d.
Cloth cost	18 10	25 0
Finishing	1 9	7 3
Cloth cost	22 3	29 3
Finishing	3 9	12 3
Dyeing (per yard)	¾	4
Cloth cost	20 0	26 6
Finishing	1 4	6 0

In view of the facts given above it is not surprising to hear that calico printers, finishers and dyers are complaining of very severe competition from Germany and other countries on the Continent. The employers in the finishing industries have adopted a policy of limiting output at comparatively high prices, and if they would only increase their production, they would be able to reduce their charges to customers.

TABLE NO. 3

Color index No.	Schultz No.	Class and name of dye	1926	1925	1924	1923	1914
		Acid Dyes					
671	506	Erioglaucine	71,502	35,295	28,655	38,254	66,526
.....	.....	Indocyanine B	51,295	16,521	*a*	*a*	*a*
1,054	858	Alizarin saphirol B	41,945	30,425	40,600	26,615	77,148
714	545	Patent blue A	29,899	31,097	10,715	11,872	63,744
833	.....	Wool fast blue BL, GL	29,468	30,248	4,940	2,264	19,238
430	.....	Polar red	25,813	28,584	7,756	15,031	2,821
691	523	Fast green	23,993	18,967	30,721	17,190	14,347
.....	.....	Brilliant milling blue	19,308	8,400	6,200	8,540	9,966
735	564	Naphthalene green	18,539	15,299	4,357	13,328	22,144
712	543	Patent blue V	16,196	24,892	23,606	66,279	196,228
.....	.....	Neolan blue	16,090	8,813	220	991	.....
667	503	Erioviridine B	14,867	13,946	4,796	8,825	40,868
.....	.....	Neolan pink	14,548	1,100	.....	661	.....
715	546	Cyanol	13,614	8,995	3,688	19,979	40,015
1,091	.....	Alizarin rubinol	12,940	7,734	11,314	48,826	10,917
288	257	Sulphoncyanine G	12,582	3,264	100	333	86,911
1,053	.....	Alizarin saphirol SE	12,497	24,382	*b*	.....	*c*
.....	.....	Neolan yellow	12,235	1,872	.....	.....	.....
.....	.....	Alizarin supra blue	11,188	2,000	*d*	.....	.....
307	265	Acid milling black B	11,022	17,635	9,484	15,543	69,590
.....	.....	Polar orange	11,021	13,386	2,204	6,908	805
487	400	Acid milling red R	10,911	7,800	3,002	.....	14,120
.....	.....	Supramine red	10,200	3,034	1,188	745	.....
		Vat Dyes					
1,228	907	Ciba scarlet	142,485	123,473	40,200	37,524	22,265
1,113	842	Indanthrene blue GCD	133,832	139,876	68,450	70,546	478,980
1,229	908	Ciba red R	111,320	85,084	17,635	7,388	1,001
1,212	918	Indanthrene red violet RH	109,244	69,107	29,038	21,916	27,874
.....	.....	Helindone printing black RD	75,000	68,000	8,300	.....	.....
1,184	881	Brilliant indigo 4B	65,711	92,300	5,783	6,417	16,880
1,118	849	Indanthrene yellow GR	63,346	111,713	39,771	87,946	12,683
1,096	760	Indanthrene golden orange G	58,334	46,646	76,046	67,265	20,092
1222	901	Ciba violet B, R	55,559	276,858	82,598	64,517	20,836
1150	833	Indanthrene olive R	55,221	22,772	30,665	1,050	13,334
1097	761	Indanthrene golden orange R	53,826	90,730	112,339	79,717	50,496
1152	.....	Indanthrene brown G	53,004	51,813	18,155	18,074	.....
1095	759	Anthraflavone GC	41,002	73,816	35,936	27,721	7,143
1151	.....	Indanthrene brown R	37,111	59,033	71,313	55,081	1,596
1170	795	Cibanone yellow R	34,830	34,815	21,035	8,373	298
1190	885	Brilliant indigo B paste	32,920	12,455	11,218	14,835	8,175
.....	.....	Indanthrene pink B	32,548	27,429	39,131	13,348	602
1099	763	Indanthrene dark blue BO	27,932	27,961	2,943	5,051	11,096
.....	.....	Ciba pink BG	27,326	22,971	21,653	*e*	.....
.....	.....	Hydron brown G, R	23,690	36,076	42,681	4,065	1,600
1104	767	Indanthrene violet RR	22,927	21,736	19,027	24,506	68,419
1217	913	Helindone orange R	22,740	63,608	37,077	22,571	14,489
		Mordant and Chrome Dyes					
1027	778	Alizarin (synthetic)	86,606	75,174	42,695	27,716	202,392
1088	855	Alizarin sky blue B	31,612	34,352	20,729	9,132	19,471
1037	783	Purpurine	19,948	28,281	271	.....	.....
720	551	Eriochrome asurol B	19,886	28,093	12,664	.....	21,060
894	637	Gallamine blue	18,287	36,021	.....	29,244	2,756
1084	854	Alizarin viridine FF	17,634	21,798	5,778	17,217	.....
1063	790	Anthracene blue	16,294	500	1,493	912	22,444
.....	.....	Metachrome blue black	15,353	15,000	9,500	7,000	399
.....	.....	Acid anthracene brown	13,295	5,515	*f* 6	*f*	30,555
1078	865	Alizarin cyanine green	11,105	11,276	7,636	16,241	2,000
1034	780	Alizarin red S	11,009	14,402	3,611	25,017	53,154
.....	.....	Alizarin light gray BS	10,998	9,503	.....	.....	.....
.....	.....	Eriochrome blue black	9,921	2,204	*g*	2,205	13,120
878	622	Delphine blue B	9,003	3,481	5,597	2,001	.....
.....	.....	Acid alizarin gray G	8,875	8,705	7,025	13,526	.....
1040	784	Alizarin SX	8,580	12,506	11,773	8,206	.....
1064	.....	Alizarin cyclamine R	8,372	15	796	797	.....
892	635	Modern violet	8,315	7,983	1,925	990	.....
1067	804	Alizarin blue S	7,180	16,359	8,152	7,948	21,231
1085	862	Alizarin blue black	7,147	51,066	78,195	70,917	54,706
		Direct Dyes					
.....	.....	Chlorantine fast blue	38,242	28,435	17,268	.....	.....
.....	.....	Chlorantine fast violet	37,576	33,941	4,849	1,102	.....
382	319	Diamine scarlet 3B	34,599	16,899	3,550	9,950	28,887
316	273	Diaminogene blue	28,395	31,943	23,970	88,778	8,308
.....	.....	Diazo sky blue	22,599	2,776	4,785	9,026	6,370
.....	.....	Brilliant sky blue	20,939	22,961	4,735	8,458	4,002
436	358	Chlorantine red 8BN	20,655	28,631	11,608	21,160	14,305
.....	.....	Diaminogene blue GG	20,051	11,933	.....	.....	.....
561	449	Trisulphon brown B	18,509	25,815	24,020	26,980	16,781
.....	.....	Diazo brilliant green 3G	17,935	10,521	5,132	325	.....
.....	.....	Benzo fast brown	17,496	9,004	5,976	5,903	9,782
.....	.....	Chlorantine fast brown	14,550	34,268	30,202	13,558	.....
70	.....	Rapid fast red GL	14,500	*h*	*h*	.....	.....
628	206	Diphenyl catechine G	13,227	8,817	4,250	750	8,642
.....	.....	Diamine fast orange	11,938	12,000	11,763	17,793	17,387
409	339	Diamine orange B	11,863	9,201	11,300	3,821	*h*
317	274	Diaminogene B	11,108	2,108	13,951	32,903	313,629
577	457	Trisulphon brown 2G	11,015	10,007	14,754	16,150	7,562
.....	.....	Zambesi black	10,825	8,380	7,913	13,000	629,359
631	14	Diphenyl chrysoine GC	9,336	3,857	.....	4,409	9,898
		Basic Dyes					
749	573	Rhodamine B	‡133,945	‡228,105	97,254	29,083	59,354
.....	.....	Rhodamine 6GDN	61,050	‡75,700	*k*	*k*	*k*
924	660	Methylene green	21,328	20,045	100	505	30,812
797	608	Euchrysine	18,080	15,622	4,525	9,483	15,403
729	559	Victoria blue B	18,057	13,389	4,533	1,722	127,76
789	.....	Patent phosphine	17,743	9,142	*l*	*l*	28,627
788	603	Acridine orange	15,621	17,353	4,031	9,349	2,336
677	512	Magenta	12,755	2,360	355	148	87,102
793	606	Phosphine	10,250	27,760	24,300	42,176	168,225
680	515	Methyl violet	9,436	250	703	690	255,063
706	538	Methyl Lyons blue	7,716	10,882	.....	.....	55
851	690	Diphene blue R	7,341	4,331	2,500	.....	.....
926	661	Thionine blue GO	6,841	6,124	1,306	6,129	18,618
927	663	New methylene blue	6,300	8,200	3,245	6,443	30,392
658	496	Setoglaucine	5,650	5,741	3,867	3,498	.....
		Sulphur Dyes					
.....	.....	Cross dye green B, G	41,246	57,924	35,246	26,242	100
.....	.....	Thionol green	37,957	.....	.....	.....	.....
.....	.....	Thionol brown	16,985	18,383	16,060	28,802	.....
.....	.....	Thionol yellow	10,960	4,970	.....	.....	.....
.....	.....	Indocarbon	9,950	50	.....	.....	*m*
.....	.....	Pyrogene green GK	5,511	4,408	*n*	.....	.....

* Preliminary figures.
a Included in Indamine 6R
b Included in Schultz No. 858.
c Included in Schultz No. 804.
d Included in Alizarin direct blue.
e Included in Schultz No. 912.
f Included in Schultz No. 88.
g Included in Schultz No. 180.
h Separate figures not obtainable.
‡ Single strength basis.
k Included in Schultz No. 571.
l Included in Schultz No 606.
m Included in Schultz No. 748.
n Included in Schultz No. 746.

Degumming Time cut 50%

The statements below indicate the possibilities of savings that come about through the use of Oakite in textile mills. The concern in question has used Oakite continuously for over two years.

"IN this mill manufacturing silk hosiery, degumming ordinarily required 2½ hours. The method used was not entirely satisfactory because the gum was not completely removed, and as a result subsequent dyeing was not even.

"An Oakite service man worked with the mill superintendent suggesting the use of Oakite, with the result that degumming time was cut to approximately 1¼ hours and less! What is more, the hosiery came through free from all gum, with a finer sheen, and the dye took better than ever before."

This mill not only uses Oakite materials for degumming, but also for boiling out before bleaching and in the dye bath itself.

If degumming is an essential process in your mill, find out what savings in time or money Oakite hold for you. Simply ask to have our Service Man in your locality call, for it is reasonable to assume that the advantages other mills have gained for degumming, kier boiling, soaping or scouring, can also be yours. No obligation.

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Helpful Service for Our Customers

IN keeping with this Review issue of Textile World, we survey with pleasant recollection our expansion during the past year. We attribute it to the confidence of our customers earned by sound, basic principles of quality in production and selling with service.

Our policy "A product for every purpose" does not end with the sale. In addition, we offer a laboratory service — the benefit of many years' practical experience; and a "will" in service that guarantees prompt, efficient action at all times. These sum up our claim to *your* confidence.

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POWER AND ENGINEERING SECTION

Mechanical Department and Power Developments

The New Coal Age and Higher Efficiency in Power Plants—Air Preheaters—The De-Superheater for Lowering Steam Temperature—Treatment of Boiler Feed Water—Increased Use of Flow Meters—Savings from Welding—Progress in Overcoming Corrosion

IN reviewing the year's progress from a power and engineering standpoint, one naturally thinks first of fuel for, excepting our waterpower, fuel is the source of all power and one might almost say the beginning of all engineering. Looking back through 1926, we find that fuels have been given considerable attention, more perhaps than in other recent years. Despite contrary and seemingly directly opposite reports as to the amount of petroleum oil yet available in the earth within the confines of the United States, the general opinion seems to be that the supplies are limited. Energetic research work has been taken up with the idea of finding new sources of oil or its substitutes. Even if future oil supplies are not diminishing, they are certainly becoming more difficult and costly to reach, for the bearing sands lie deeper.

We find that two lines of endeavor are being followed in the search for more oil. In the West are vast deposits of oil-bearing shales, so vast that it is estimated that the oil therein is far greater in amount than that which has been taken from the oil sands. The research work being carried on is to discover the best and cheapest method of extracting the contained oil, and very costly experiments are being made by the Government to determine this. Oil is being obtained by a crushing and distilling process, but the cost is high. Retorts of immense size are required and it is this feature that is accountable for the excessive cost. Profitable utilization of these vast deposits will come eventually, however, and while the product may not be as cheap as the present earth oil, the price will not be prohibitive.

Oil from Soft Coal

The other line of endeavor is for the purpose of obtaining oil from soft coal; not as a distillate but as a conversion product. The aim is to change soft coal over into oil by some form of liquefying process. In November of last year, there was held at the Carnegie Institute at Pittsburgh, an international conference on soft coal, the first of its kind. At that conference, Dr. Bergius, of Heidelberg, Germany, announced that after thirteen years of research and an expenditure of $6,000,000, he had succeeded in changing soft coal over into oil on a commercially profitable basis. In brief, the process consists in crushing — not pulverizing — the coal to a degree of medium fineness. It is then mixed with some heavy oil from a previous batch to form a thick paste. This paste is then forced at 2500 to 3000 lbs. pressure through a retort that is heated to 500 deg. C.

Research and study in chemistry, electricity, power generation, and various branches of engineering have brought developments that are of interest to the mechanical departments of textile mills. Some of these advances are not ready for immediate application, but there can be no discovery in any of these sciences that does not, sooner or later, make contact with the textile industry. Profitable mill operation depends largely upon adapting improvements for use as soon as possible. The accompanying article discusses, among other things, fuels and power equipment developments, progress in welding broken machine parts, and the methods that are being adopted to overcome the vast losses due to corrosion. Emphasis is placed on the need for the textile industry to keep in closer touch with the progress in other major industries.

Hydrogen gas at the same pressure is also passed into the retort. From here the mixture passes into a second retort at 420 deg. C., where more hydrogen is introduced.

A hydrogenation of the coal takes place due to the fact that when soft coal at such high pressure is heated to 500 deg. C., the compounds of high molecular weight split up into compounds of lower molecular weight, and these latter compounds unite with the hydrogen to form liquid oils. The oils thus formed are comparable to crude petroleum, and on being distilled yield the various distillates as does petroleum. According to data given by Dr. Bergius, 2,000 lbs. of soft coal yield 300 lbs. of gasoline, 400 lbs. of kerosene, 120 lbs. of lubricating oil, and 160 lbs. of fuel oil. As a special instance of this process, it is claimed that motor gasoline can be made directly from lignite, vast deposits of which exist in the Middle West. One can well imagine the tremendous possibilities that lie in the successful development and operation of the Bergius process.

Development of Water Power

Low-temperature carbonization of soft coal continues to be a leading subject of research, with much yet to be learned. The process can be best carried out with the high volatile coals of the middle states. The process yields a gas that contains some 800 b. t. u. per cubic foot, as compared to but 550 of city gas, but in plants, since in order to make the process an economic success, there must be an outlet for the gas generated and the coke produced, as well as for the other by-products. Professor Parr of the University of Illinois is working on one particular line of investigation; that of producing a smokeless fuel for domestic purposes from the high volatile midcontinent coals.

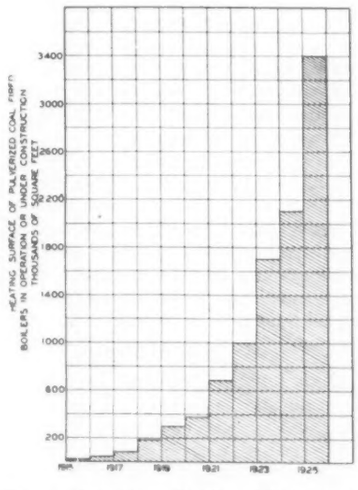

Fig. 1. Growth in the Use of Pulverized Coal as Boiler Fuel

Coming now to water-power, or white coal, according to the annual report of the Secretary of Commerce, there yet remain great opportunities for the development of this source of power. The electric generating capacity of the country has risen in five years from 14,280,000 kw. to 23,840,000 kw., or 67% increase. For the same time, the consumption of coal has gone up but 15%, indicating the gain from the utilization of waterpower and from the greater efficiency in the power plant. Coal consumption has decreased from 3 to 2.1 lbs. per kw. The rivers of the country have potential power capacities of 55,000,000 h.p., but of this less than 11,000,000 has been developed.

Power Generating Equipment

Passing from fuels to boilers and power generating equipment, we find an increasing demand for higher pressures and higher steam temperatures in conjunction with larger sized units, both in boilers and turbines. Pressures of 600 lbs. and steam temperatures of 750 deg. F. are becoming frequent in public service stations. The largest single unit turbine ever made is now being built for a Massachusetts station, and will be of 63,000 kw. capacity. In the same factory, there is being built a compound unit of 204,000 kw. This machine will consist of one high-pressure and two low-pressure units, capable of being operated singly if desired.

As expected, there has been during the year a large increase in the number of plants using pulverized coal. The unit system has advanced rapidly in favor and in development, and not a few new types have been put on the market. Some of the earlier ideas are being abandoned in favor of newer ones which have developed from trial and experience with the first equipments. In the earlier installations, the idea held that the combustion space must be very great; in fact, it did have to be so in order to give complete combustion with the long flame method of burning. This requirement to a large extent limited the size of the units. Now, however, the preferred method is to enter the air and fuel in such a manner that great turbulence is caused within the combustion space. This results in a short flame, requires a much less volume of space, and yet complete combustion is obtained.

The turbulence thus set up has proved to be severe on the refractory linings of the furnace walls, due to the excessive scouring action com-

bined with the high degree of heat. Partly with the idea of overcoming this difficulty, and partly with the desire of making use of the radiant heat, has come the development of the water-cooled side and bridge walls, the fin-type of wall, and lastly, the wall in which is mounted the superheater. With the furnace walls thus protected by some one of these methods, a far greater amount of coal can be burned per square foot of grate area or per cubic foot of combustion space than otherwise. The use of the water screen in the ash pit has greatly facilitated the handling of the ashes in the pulverized fuel furnace. Fig. 1, which is used by courtesy of "The Tech Engineering News," shows the growth in the use of pulverized coal as boiler fuel.

Air Preheaters

Air preheaters that heat the air that is required for combustion by means of the waste heat in the flue gases help to increase the overall efficiency of the boiler. With the increased boiler pressures and the corresponding higher pressures of feed water, it was found necessary to use steel water tubes for the economizers. These naturally are more susceptible to corrosion than were the old style cast iron tubes, and to overcome this difficulty, one manufacturer has perfected the lead-covered, lead-coated steel tube. A complete armor of lead inside and outside protects the tube from the destroying action of the oxygen in the feed water, and the sulphuric acid in the flue gases.

The use of the water-cooled furnace walls, with the multiplicity of small tubes in parallel with the boiler, makes it doubly necessary that all scale forming impurities be removed from the feed water, preferably before the water enters the boiler. This need has demanded the development of the so-called hot process methods of purifying feed water, and also has largely increased the use of deaerators for removing the oxygen from water and of distilling apparatus for supplying distilled water for the makeup.

The De-Superheater

Until now, every effort has been made to increase the temperature of steam, or in other words, to have the steam as much superheated as possible. It seems very strange then to learn of the de-superheater, the latest development in boiler room practice. This piece of equipment is for the purpose of lowering the superheat in the steam as it issues from the boiler. For example, imagine a plant in which steam at 600 lbs. pressure and at a temperature of 750 deg. F. is being generated for use in the most modern of steam turbines. This plant has other less modern turbines that are not capable of standing these high pressures, and particularly the high degree of temperature. It is necessary, therefore, to lower both.

The pressure can be easily adjusted by use of some form of reducing valve, but the lowering of the temperature calls for something that formerly has not been required, hence the de-superheater. Briefly, it consists of a tubular heater in which water circulates in the tubes and the highly superheated steam fills the space around the tubes. The heater is usually connected with the boiler, and thus the water is at the same pressure as that in the boiler and at the boiling point. The superheat extracted from the steam passes into the water and generates steam again, so there is really no loss of heat. By proper regulation of the flow, the superheat can be reduced to any desired amount.

Fig 2 shows a de-superheater of the latest type, the so-called non-contact type. It is given this name because the highly superheated steam and the water do not come in contact. The steam enters at A and leaves at B, while the water enters at C and leaves at D. As already stated, the de-superheater is in series with the boiler and so located that the water line comes at the top of the shell. The steam to be de-superheated passes through the tubes, and the water which is at boiler pressure and temperature is in the space around the tubes. The heat that is removed from the steam passes into the water and vaporizes a portion of it, thus making steam that passes over into the main boiler drum by way of the outlet D. In this way there is no loss of heat, since the heat removed from the steam is transmitted again to the contents of the boiler.

Increased use and many improvements have been made in what might be called the ultra-refinements of superpower stations. Reference is made to de-aerators, preheaters, multiple stage bleeding for the heating of feed water, etc. By reason of the immense size of surface condensers now installed, and the need of maximum cooling efficiency, it became necessary to find some inexpensive and continuous method of keeping the insides of the water circulating tubes free of organic slime, which is really an algae growth, that very effectually reduces the transference of heat. It has now been determined that 4 lbs. of chlorine to 1,000,000 gals. of circulating water will keep the tubes absolutely free of this slime and growth. This treatment does away with the large expense of time and labor formerly required for the periodic cleaning of the tubes by hand.

Caustic Embrittlement

Much study and research have been given during the last year to ascertain the cause of and means of avoiding the so-called "caustic embrittlement" trouble as it occurs in steam boilers. Prominent in this research work have been Professor S. W. Parr and F. G. Straub of the University of Illinois engineering experiment station. The results of their studies thus far have been published in Bulletin 155, issued by the station. Certain facts have been absolutely determined as follows: that sodium carbonate is the one substance always present in waters causing embrittlement; that sodium sulphate is always lacking in such waters, or is in small amounts as compared with the carbonate.

The theory is that the excess of carbonate is hydrolyzed to caustic soda, and that whereas this caustic soda may not exist in concentrated amounts in the water as a whole inside the boiler, yet it does concentrate in the joints between the plates and around the rivets. The caustic soda is decomposed, nascent hydrogen is

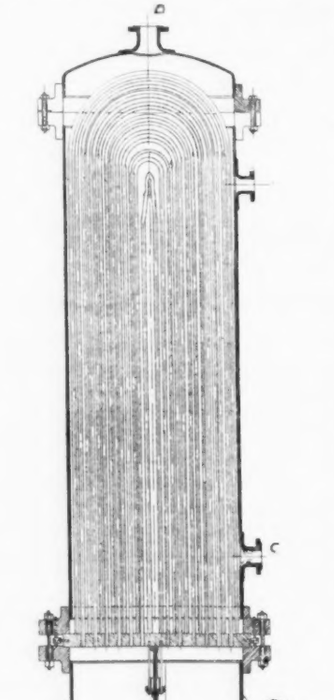

Fig. 2. De-Superheater, Non-Contact Type

liberated and is occluded by the steel. It then "attacks the amorphous cement at the crystal boundaries of the metal."

The places attacked are always places of initial stress set up during the construction of the boiler, therefore, the resultant action is due to a combination of the stress and the chemical action of the occluded hydrogen. It has been determined that by maintaining the ratio of sodium sulphate to sodium carbonate at 2, that the embrittlement action is halted. This ratio is brought about by neutralizing 70% of the carbonate alkalinity with sulphuric acid or by adding aluminum sulphate. Magnesium sulphate can also be used. All of these substances in themselves can cause trouble inside a boiler if wrongly used, and any addition of them to a boiler water must be done under expert direction and control. Further investigations are under way, as there are yet many facts to be determined and typical cases to be studied.

Use of Flow Meters

The year has seen a much increased use of flow meters, particularly for the measurement of steam flow. With the latter part of the year came the announcement of a new electric flow meter based on an entirely new principle of operation. This principle is that of a self-balancing inductance bridge, and is claimed by the makers to overcome some of the difficulties common to other types of electrical meters. There are no electrical contacts dipping into the mercury, which should prove to be of advantage. In addition, the clock is self-winding, another admirable feature.

Advance in Welding

Leaving the power plant and considering enginering in general, we find that strides have been made in both oxy-acetylene and electric welding. Bronze welding of cast iron is being widely used as it is more rapid, requires practically no preheating of the piece to be welded, there is less "veeing out," and it gives a stronger joint than where cast-iron rods are used for the welding metal. Bronze welding is really the only satisfactory way to weld malleable iron castings, and for this reason finds much use in the repair of textile machine parts, looms especially. By reason of the fact that no preheating is required, this type of welding is used in the repairing of large castings where the preheating required by cast-iron welding would be very difficult to accomplish, if at all possible.

Stellite welding has come into favorable notice in textile repair work for the building up of localized worn spots on otherwise little worn machine parts. Frequently it happens that certain places on shafts or other machine parts are subjected to excessive wear, and in consequence of such wear, the parts would have to be replaced when the greater portion was as good as new. Such repairs are naturally very costly. Stellite, the new alloy, is composed of chromium, tungsten, and cobalt, and when used with the gas welding torch to build up these worn areas, gives a surface that is very hard and yields only to grinding. This method of repair is specially applicable to worn gill screws, front spinning rolls, shafts of all kinds, French combing machines, parts, etc.

The Linde Air Products Co. has been obtaining data to show the amount of saving due to broken castings or other machine parts being repaired by gas welding. In getting at this data, they have estimated that some 300,000,000 cu. ft. of oxygen are used in the United States annually for repair work; that this oxygen costs $4,500,000; that the cost of the oxygen is one-twelfth of the total cost of the repair job, which would then be represented by $54,000,000; and finally, that the cost of a new part is 7½ times the cost to repair the broken part, or $405,000,000. These figures have been obtained from hundreds of repair jobs in all classes of industry, and serve to convince one of the tremendous value to industry of the gas welding process, as well as to show the very large savings brought about by its use.

A unique feature in electric welding

has been worked out in the research laboratories of the General Electric Co. We have heard much of late of the tremendous energy that exists in the atom and the possibilities of using it in industry. This has actually been done in the case of the hydrogen atom. As is widely known, the hydrogen molecule consists of two atoms heretofore considered inseparable. Now, however, by passing a stream of hydrogen gas through an electric arc, this molecule is split up into the two separate atoms. On leaving the arc and just beyond, these two atoms recombine into the original molecule with the resultant generation of intense heat. The welding operation is carried on in the midst of this recombining flame, while at the same time, the metals being welded are surrounded with an atmosphere of hydrogen, which fact prevents any oxidation taking place, a very desirable feature in all welding work. Perhaps this is but a forerunner of the future utilization of the vast stores of atomic energy.

The use of electric welding is being largely extended, particularly in machine construction. Machine frames and bases are now being fabricated from welded steel instead of from cast iron, with consequent reduction in cost and with less liability of breakage when the machine is put into use. Worn surfaces are being built up by electric welding using various metals to fit the job. For instance, the worn corners of the buckets on large water turbines are being filled out with monel metal. The present may well be called the "age of welding," both electric and gas.

Much progress has been made both in research and in actual practice with the further use of chromium and nickel in combination with steel and iron. Great claims are being made for the use of nickel in cast iron. It is claimed that nickel in cast iron up to 3% gives beneficial results similar to silicon in that it assists graphite formation and decreases carbide, thus reducing the number of chilled and hard spots. In other words, it makes the iron gray and machinable, but in so doing it does not show up the disadvantages that silicon has. Silicon causes progressive impairment of the desirable physical properties of cast iron, such as open grain, greater porosity, decreased hardness, and greater strength. While increased silicon lessens all of these desirable properties, nickel increases them.

One peculiar feature of this use of nickel is that while the iron is softened as regards machinability, the actual Brinell hardness is increased. Among the other advantages gained by its use are the equalization of hardness in the casting, increased wear resistance, increased strength, both tension and compression, and increased toughness. Nickel in cast iron will produce a more sound casting, free from porosity and internal shrinkage.

Chromium is finding an increased use in making stainless steel. Chrome irons and steels are remarkable for their high tensile strengths, resistance to oxidation at high temperatures, easy workability, and relative cheapness. Chromium plating is being introduced and offers great possibilities for the future. It furnishes a rustless coating of great hardness and durability, especially when hot. Although the film is extremely thin, it gives a hardness that is but little less than the diamond.

Prevention of Corrosion

The prevention of corrosion of iron and steel is still being made the subject of intensive research and study, both in the factory and in the laboratory. No other natural phenomena, chemical action, or destroying agency begins to cause the vast amount of financial loss and industrial waste in all industry that is caused by this demon of corrosion. Progress is being made in fighting and overcoming it, but much remains yet to be done. Not only is the effort to stop corrosion being made, but also much remains to be done in making the managers of industry realize the tremendous losses that they are experiencing and the necessity of doing everything possible to check the destruction.

This campaign against corrosion is being fought along three distinct lines: first, in furthering the use of nonferrous, noncorrosive metals in place of iron and steel; second, the introducing into the ferrous metal of some other metal that will render the combination rustless, as for instance, chromium; and third, the development of rust-inhibiting and acid-resisting paints for the protection of the ferrous metals. Success has been achieved in each of these lines, but there must be no letup in the work. It is a battle that must be waged unremittingly.

Rubber, as is well known, offers a considerable protection against corrosion from many liquids. Sheet rubber is being used extensively in place of sheet steel to resist wear from dirt and gritty materials. It has been found that at the top of an inclined chute, for instance, where gritty material like cinders or crushed ore is being discharged from a conveyor, that a rubber plate will outwear several sheets of steel. Again, rubber can now be electrically deposited from a latex solution in a manner similar to the electric depositing of metals. This process has been described in detail in a previous issue of this magazine, and further comment is unnecessary. This use of rubber should be of special interest to textile men since it is easily applicable to the coating of fabrics. The base on which the rubber is deposited must be porous in order to permit the escape of the gases evolved during the process, thus avoiding any disturbance of the layer of deposited rubber.

Bakelite, "the material of a thousand uses" is constantly being adapted to more uses, and some of these uses concern the textile industry. One such possible use is for a protective varnish on parts of dyeing and finishing machinery that are exposed to the action of acids or dye liquors. Extractor baskets and housings are being painted with this varnish, which must later be baked on in order to insure permanency. The same treatment might well be applied to spiders and shafts of dye kettle drums and reels in order to prevent not only the rusting of these parts but at the same time avoiding possible iron stains on the fabrics or yarns being dyed.

The use of monel metal is increasing. It makes possible the use of the same kettle for a light shade today and a dark shade tomorrow, since there is no possibility of any traces of the color being left in the kettle after a dyeing. Hosiery dyers find these monel lined machines of great value in their work.

Elimination of Waste

Throughout all industry, there has developed an increasing demand for the elimination of waste and the reduction of manufacturing costs. The week of Oct. 25-30, 1926, was devoted to Management Week, and over 300,000 meetings of executives and engineers were held throughout the United States and Canada for the consideration of this subject. One line of endeavor, and an extremely profitable one too, is to standardize the almost infinite number of small parts used in the manufacture of machines and to reduce the required sizes and types to a minimum. General Motors Co., for instance, has reduced the number of parts used in the cars that it produces from 13,355 to 2,099, and the end is not yet attained. What a field for a similar reduction lies in the textile machinery industry.

Another point that was emphasized during Management Week in connection with the elimination of wastes was that, in the campaign against the tangible wastes, the intangible wastes should not be overlooked. As direct causes of some of these intangible wastes may be cited disorderly conditions in and around a plant, poor lighting, poorly maintained buildings and equipment, and lax discipline, all of which tend to prevent high efficiency of the working force. A contented group of employes working in well kept, orderly buildings and grounds reaches a higher efficiency than otherwise, and the latent powers of such employes are thus more fully utilized.

A textile executive, on reading this review, may say that these facts may all be true and interesting, but very few of them apply to the textile industry. This is a short-sighted view. One trouble with the textile industry today is that it has not kept properly in touch with these developments in chemistry, engineering, merchandising, and general business policies, as have other major industries. It has kept too much to and within itself. There can be no discovery, no development, no improvement in chemistry, electricity, power generation, and engineering but that in some way, sooner or later, directly or indirectly, makes contact with the textile industry. Research and then more research in business, in applied and in pure science is our present need, and should be made the slogan for the future. To the credit of textile manufacturers, it may be said that the events of the last year indicate that this vital need has been recognized.

Union-Buffalo Mills Co.

Changing Over to Standard Frequency—New Motors Installed

In common with many other mills, the Union-Buffalo Mills Co., Union, S. C., requires more power for the operation of its two mills than was necessary in years past, due to changes in textile work. This fact, combined with the abnormally dry period of 1925, which recurred in 1926, resulted in a shortage of power.

The company has a water power on the Broad River at Neal Shoals, about twelve miles below Union, and a steam plant at its Buffalo mills. The steam plant was not large enough to fully supplement the water power, and the water power as developed was no longer large enough to carry the peak load of the mill. All the electric equipment was designed to produce 40-cycle current, which is a non-standard frequency, and all of the power companies serving this territory produce 60-cycle current. This condition greatly complicated the power problem.

Studies were made to determine how best to use all of the available facilities in getting the necessary power for the operation of this company's two mills.

The steam plant could not be enlarged on account of the condensing water situation, and it was determined that it would be best to purchase all the energy needed in excess of that generated by the water power of the company; also to adopt a policy looking toward the mills ultimately being equipped with all 60-cycle apparatus.

Substation Installed

A contract has been made with the Broad River Power Co. under which the necessary additional power will be obtained. The power company is installing the necessary substation and frequency changer capacity so that its 60-cycle and the mill's 40-cycle system can be operated together. A 60-cycle substation is also being installed at the Union mill.

The Union-Buffalo Mills Co. are installing at their Union mill about 800 h.p. of new 60-cycle motors to drive the weaving department, thus getting greater flexibility and reliability in the operation of that department, and making a definite start on the program of ultimately becoming a 60-cycle plant.

This program of changing to 60 cycles has been outlined so that the transition may be gradual, and so that it will not be necessary to scrap any old apparatus until it is worn out, or until the mill, for some other reason, wishes to change it. Chas. T. Main, Inc., Boston, are the consulting engineers on this work.

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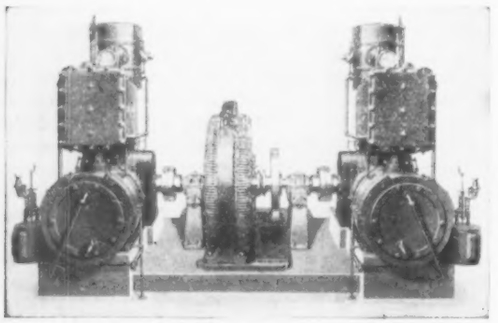
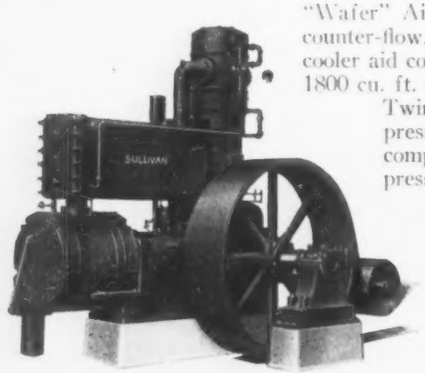
The great variety of types, and the wide range of capacities of Sullivan Compressors enable you to select the compressor exactly suited to your mill's needs.



"WN-4" Twin Angle Compound Compressor

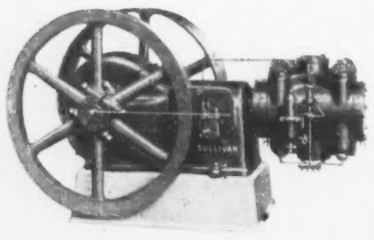
Angle Compounds

The design of the Angle Compound Compressor permits an exact balance of moving masses and forces, preventing vibration, reducing power waste and making possible the use of smaller foundations and smaller floor space. Lubrication is automatic and positive. "Wafer" Air Valves and the nine-pass, counter-flow, self-draining, copper intercooler aid compression efficiency. 400 to 1800 cu. ft. capacities are available.



"WJ-3" Angle Compound Compressor

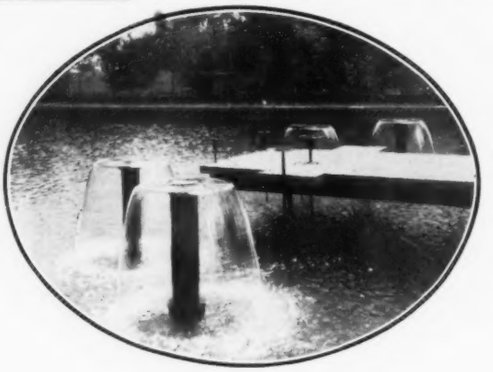
Twin Angle Compound Air Compressors consist of two separate, complete two-stage Angle Compressors, working side by side, and driven by one common direct connected motor. When the demand is less than half the capacity of the complete unit for any extended period, one compressor may be uncoupled, allowing the other to run at full efficiency. Variation in demand on the single angle compound compressor is taken care of by multi-step load control. Capacities, 800 to 3700 cu. ft. *Bulletin* 1383-*A*.

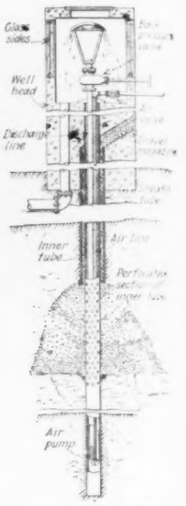


"WG-6" Single Stage Compressor

Single Stage

"WG-6" belt driven single stage compressors are available in capacities from 68 to 1500 cu. ft. They are splash oiled and have "Wafer" Valves and inlet valve unloaders. Two-part removable die-cast main bearings. *Bulletin* 1383-*B*.





Air Made Well in Detail

AIR LIFT AND AIR MADE WELLS

One of the most important recent developments in connection with Air Lift for the textile plant, is the Air Made Well Process. It makes shallow wells in sand or sand and gravel formation, dependable, absolutely preventing clogging of the strainer, and slowing up of the water flow. The system saves you the expense of drilling deep wells to get a dependable water supply. You will want to know more about it. The Air Lift pumping system has no moving parts in the well. It follows a changing water level with only slight variation in efficiency, and is not subject to trouble from mud or sand, or crooked wells. It will give you more water from your wells and make the supply dependable. *Bulletin* 1371-*I*.

VACUUM PUMPS

Built in five standard sizes 120 to 1600 cu. ft. displacement. Sullivan Vacuum Pumps have "Wafer" inlet and discharge valves, heavy duty construction, full enclosure of moving parts, and splash lubrication. Suitable for any Dry Vacuum Pump service. *Bulletin* 1378-*B*.

"WG-61" Vacuum Pump

See also CONSOLIDATED TEXTILE CATALOG

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Fit Moving to the Making

The Advanced Art of Material Handling—Linking Operations, Increasing Production, Reducing Waste, Improving Product, and Economizing Floor Area—Possibilities of Increasing Length of Machine Runs, Setting the Pace for Production, and Enlarging Size of Unit Loads

*By M. G. Rosenthal**

FROM surveys made in hundreds of textile mills, it is comparatively easy to determine some of the reasons why the leaders have been successful. Very nearly all of these successful mills have considered machine operations in connection with their special conditions and products, also such matters as "fitting moving to the making" in its broader meaning. Progressive mills, regardless of size, are beginning to show real interest in the advanced art of material handling, and only demand guidance in the direction of success.

Moving, when properly accomplished, constitutes more than merely changing the position of the product in manufacture. To be profitable, it must do one or more of the following things:

(1) Link up operations.
(2) Increase unit loads.
(3) Afford longer machine runs.
(4) Increase production.
(5) Reduce waste.
(6) Make possible better products of the quality made.
(7) Set the pace for production.
(8) Reduce floor area.

All these benefits derived from "fitting moving to the making" will be discussed in this article in a general way, as they apply to material handling equipment.

Linking Up Operations

One of the largest trade magazines claims "moving is 90% of the making." This is not entirely true in textile manufacturing, but the statement does point out the fact that moving is one of the largest single items of manufacturing expense.

The plant that has increased its capacity over a period of years and put up buildings of varied construction at random, as a rule has a heavy cost of material handling due to the broken link of manufacturing. There is no excuse for saying that such a condition cannot be remedied.

There are many remedies, according to actual conditions. In the accompanying illustration are shown two mill buildings on opposite sides of a railroad track, where the cycle of operation has been made continuous by the installation of an automatic tramrail dispatching carrier. Electric control buttons send the carrier from a starting station in one building to any number of stop stations in the building on the opposite side of the railroad. Here the load is released and the carrier is again returned without an operator to the starting station for further loads.

Without the aid of this installation, it required the use of one elevator to the ground floor, then over the railroad (provided no box cars blocked the passage) to the building on the opposite side, and again up an elevator to the required floor. The extra time consumed and the delays in manufacturing by the latter method would very soon pay for a modern material handling system.

There are many uncoupled operations that could be linked together in a similar manner, at a great saving.

Increased Unit Loads

There are several branches of the subject of increased unit loads which come more directly under the headings "Longer Machine Runs," "Increased Production," and "Pacemaker for Production," although each heading might show a combination of all. The average textile executive who buys and installs mechanical handling equipment has only one object in mind and that is to reduce the cost of factory transportation. In most cases, he gets just what he pays for by reducing his transportation cost; whereas if a careful study of material handling is made and as many accomplishments as possible are combined, it is only logical to state that the profits increase many times the original amount.

In most cases the salesmen of mechanical handling equipment are to blame for this condition, as they take the course of least resistance by selling the prospect what he asks for instead of pointing out what he should purchase to make a greater gain.

Now let us first consider the effect on manufacturing cost of increasing the number of units moved at one time and increasing the size of the single unit.

It has been an error in the past to think that mechanical material handling should only be used for heavier articles than those which can be handled by manpower. Rayon plants that only spin a few ounces of silk on a spool place large quantities of these on pin bar racks conveyed over a tramrail supported from the ceiling. Each rack is a complete record of the spindle and machine that the individual spool was taken from, in case that any imperfection should be detected. These pin racks prevent the yarn from rubbing or becoming damaged and can be moved in trains of six, eight, or ten trucks by a single operator. The predetermined path of the rail guides this train of racks through very narrow aisles without running into columns or machines and prevents damage to machinery and material.

To sum up the qualities in the above, we first have a complete record of the spindle the spool was taken from; second, many small spools to increase the unit load moved in a fraction of the time by a single operator; third, a minimum of waste or damage; fourth, more first grade quality of product; and fifth, a reduction of floor space by narrower aisles.

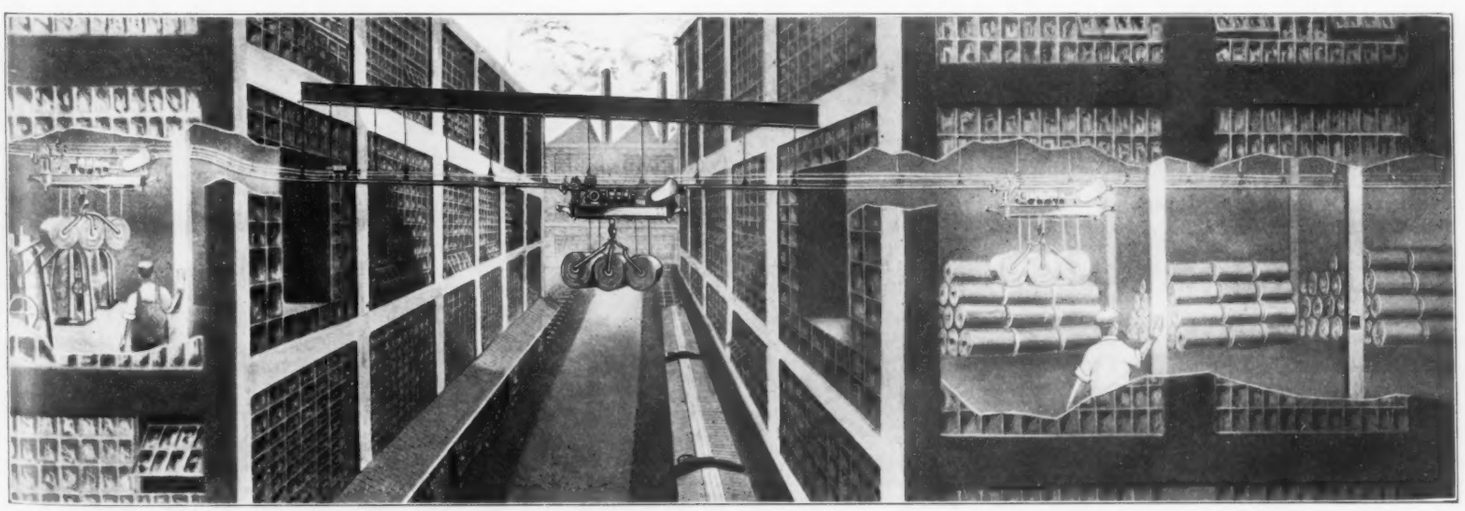
Increasing the size of the single unit when applied to mechanical material handling as a rule makes quicker changes at the machine with "longer machine runs" and "increased production." One specific application worthy of mention is where roll piece goods weighing 300 lbs. were handled singly on small floor trucks. These rolls were increased to 600 lbs. each and handled three at a time on an overhead rail by means of a floor-controlled electric travel hoist unit, with a special grab. Any individual roll of fabric could be picked up or released singly from this special roll grab. One operator by this method handles six times the amount, in one trip, previously handled. This increases the production through longer machine runs, as well as reduces the number of waste ends to one-half the amount.

Longer Machine Runs

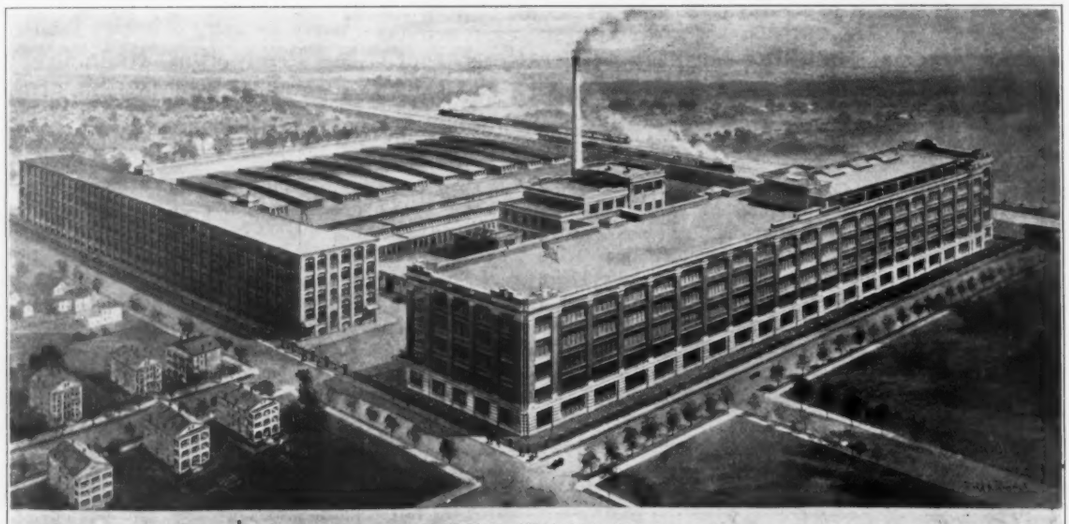
Mechanical equipment becomes necessary in many cases to produce longer machine runs, but is a very profitable return on the investment. This condition is usually brought about by the increased unit load.

Many weaving mills that previously used beams 18 in. in diameter increased them to 20, then to 24, and today it is not uncommon to find warp beams of 30-in. diameter and larger. The "longer machine runs" in this case increased production by reducing

*Textile Division, Cleveland Tramrail Co., Wickliffe, O



Two Mill Buildings on Opposite Sides of a Railroad Track, Where the Cycle of Operations Has Been Made Continuous by the Installation of an Automatic Tramrail Dispatching Carrier



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Leonard P. Fridle
Vice President

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JOHNSON THERMOSTATS

the number of changes in beaming, slashing, tying-in, and at the loom.

Increased Production

Increased production is not always due to faster handling or longer machine runs, as might naturally be assumed. In raw stock or skein dyeing, it depends on the quantity dyed in a single batch or increasing the unit load. It requires as much time to dye 150 lbs. of wool as it does 500 lbs. The cost in racking skeins for the larger unit is only a small added expense compared with the attention at the dye vat. In one dye plant eight men, with mechanical handling equipment, are now producing double the amount of work previously done by 20 men. This released 12 men for other important duties.

Reduction of Waste

The reduction of waste by means of suitable material handling should not stop with the saving of material in the article manufactured, but should also be considered in the shipping department. Many large mills visited by the writer had repair bills on shipping cases amounting to from $5,000 to $10,000 a year. Heavy shipping cases, when rehandled by hand after being stacked two to four cases high, require repairs before final shipment. This condition can be remedied by mechanical handling equipment, and it can be made safe for the men to convey and stack the heaviest cases with ease.

For the material and articles in process, in most cases the more times it is rehandled unnecessarily the greater the amount of waste. In many cases no consideration is given at all to the form of container or carrier, regardless of damage or waste.

For fine yarns on cops or bobbins the pin board method has been used to some extent, which keeps the yarn in perfect condition without it becoming chafed or tangled. This has been considered too slow a handling proposition for manufacturers of coarser yarns. Although they admit better conditions, they do not feel that the benefits are enough to justfy the expenditure. One method of overcoming this handicap is to use small containers with a bottom and two sides that will nest, in which the cops or bobbins are all placed parallel to one another in orderly style. These can be placed on carriers with three or four shelves on each side of a rack.

These racks, with a certain partition and the shelves on a few degrees pitch towards the center, will prevent any of the yarn from falling off. An overhead tramrail track would be of decided advantage in moving train lots of these rack carriers at one time through a loom shed where the individual container could be delivered to the required loom from a main aisle.

Making these trips at regular intervals with the small container has advantages over allowing a larger quantity to become covered with lint. Lint woven into material does not help the quality of the product.

A saving of only a fraction of 1% waste will supply the required funds for a modern material handling system.

Better Product of Quality Made

All the small details of waste explained above have a direct bearing on the quality of the product. This in turn has a direct influence on the demand for a certain mill's product. Yarns that have not become chafed or tangled in handling produce a more even tension on the machine, with the result that a smoother, more uniform piece of finished fabric is made. They also reduce the number of broken ends to be tied in, thereby bettering the quality and increasing machine production by reducing the number of stops.

Many seconds, or imperfect goods, are caused by poor conditions of material handling. It is well to determine the proportion of waste or soiled defects caused on the spinning, weaving, or knitting machines as compared to that caused in material handling. Check up the waste yarns on the floor or in waste containers and find out the amount that should have gone into the finished product by better material handling conditions and that should have produced a quality product.

Pacemaker for Production

The linking up of operations is one way in which suitable material handling is a pacemaker for production. Where this is linked up with increased unit loads and longer machine runs, production is sure to be forced. Quick handling of raw materials or partly finished stock in storage departments conveyed in reserve amounts to the production machine aids production. If the material handling operator is forced to do this manually the results are not always obtained. In order to get the required results, the burden must be on material handling equipment, which knows no fatigue.

One of the greatest factors for a gain in pacemaking is where a production machine is now dependent on several operators to make the change and the machine is idle during such an interval. In most cases one operator with mechanical handling equipment can do this in a small fraction of the original time. It is very common to see a large loss in production from this source.

Reduced Floor Area

No matter whether the buildings are owned or rented, each square foot of floor space costs the manufacturer some specific amount. Where overhead material handling equipment is used, the aisle space required is reduced to a minimum. The rail is a guide for the route of travel required and keeps the load from machine or column interference. Closer concentration of machinery is possible in this case, and is bound to produce the largest amount of production in the least amount of floor area, with the shortest amount of material handling travel.

Many storage rooms have been increased enough in capacity by stacking to a greater height by overhead tramrail to make added floor space unnecessary. In many cases, the present floor maintenance cost would soon purchase overhead equipment to relieve the burden from the workmen and do the work in less time.

Material handling has reached such a stage in manufacturing development within the last few years that no single article on the subject can hope to more than penetrate the outer surfaces of it. Some mills have a slight difference in the kind of machine used to produce a given product and may also vary considerably in the arrangements of machinery, but in either event modern standard equipment can be planned to fit the conditions. Therefore, "fit moving to the making" by a thorough study of modern internal factory transportation and by combining its many valuable possibilities

Developments in Illumination

Great Progress Has Been Made in Lighting Equipment—Tests Show Influence of Light on Production and Safety of Workers—Reduced Labor Turnover—New Industrial Lamps in Standard Sizes—Lighting Layouts—Educational Work by Light Association

*By Roy A. Palmer**

EXTENSIVE surveys conducted by central stations and manufacturers of lighting equipment have revealed the fact that 75% of the industries of the country are lacking in illumination according to modern standards. It is unfortunate that figures are not segregated according to classes of industries so that an idea could be obtained as to the standing of the textile industry. However, it is reasonable to assume that at least a similar condition exists in textile mills as in other industrial plants.

If as many as 75% of the textile mills are inadequately lighted, it undoubtedly is because the progress in illuminating engineering and in the development of industrial lighting equipment has been so rapid that the work of bringing the mills up-to-date in lighting systems has not kept abreast with this progress. More than likely there are some cases where mill lighting has been neglected because of a lack of appreciation on the part of executives as to what an important part good lighting plays in connection with production, accident prevention, labor morale and other problems of mill management.

Totally Indirect Lighting in a Knitting Mill, Providing a High Level of Illumination Free From Shadows

Labor Saving Equipment

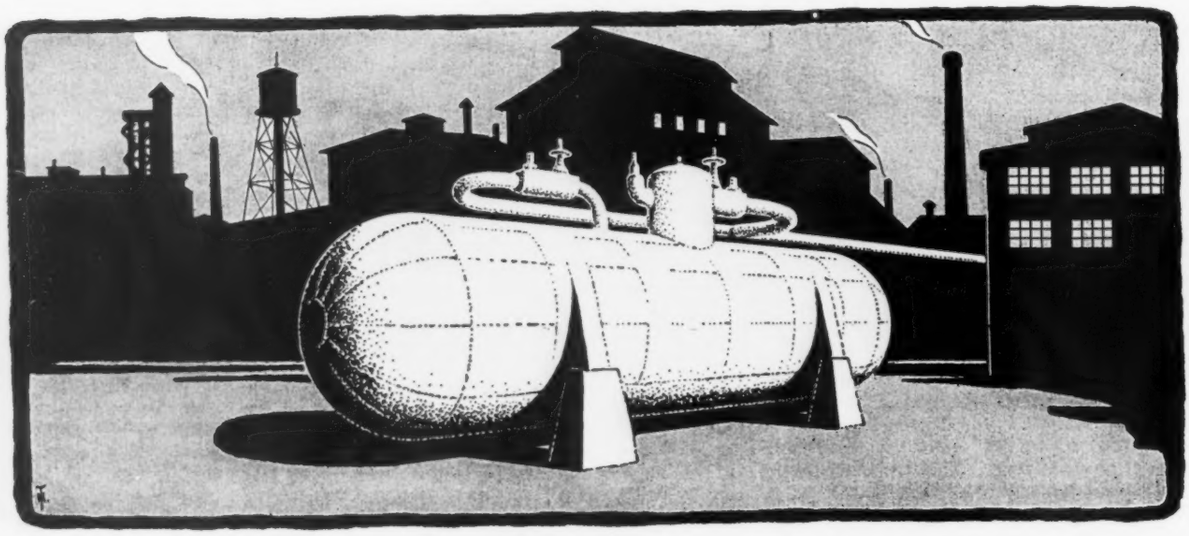
It is not a bit of flighty imagination which has placed modern lighting systems on a par with labor saving machinery. Research in laboratories has revealed how the production rate is related to the speed of vision and how the eyes function under various degrees of light. The development of lighting equipment has made possible lighting in factories which approaches that of daylight. If as many as 75% of the textile mills in this country are underlighted, it should be to the interest of every mill executive to acquaint himself with the findings of the research laboratories and the various developments in lighting methods and equipment in order that he may reap the benefits of greater production and other advantages.

Tests in research laboratories have shown that seeing is accomplished when the eyes make brief stops. As the eye is passing from one object to

* National Lamp Works of General Electric Co.

and now

Steam Storage



Ample Steam for Peak Loads!

STEAM plants using Ruths Accumulators meet peak loads with steam which has been stored during light load periods. The boiler output is uniform and steam pressures constant.

The result is standardized manufacturing conditions made possible by these absolutely constant pressures and the relatively unlimited quantity of steam available at all times.

The uniform boiler load provides ideal combustion conditions. The fuel consumption is usually reduced from ten to fifteen percent. Maintenance costs are lower as the forcing of boilers to meet peak loads is eliminated.

Ruths Accumulator Company Inc.

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another it is practically blind since it cannot focus on an object during motion. Hence short pauses are made giving the eye sufficient time to focus on the objects to be seen. If the objects are properly and adequately illuminated, it takes less time to see those objects. If the object happens to be to find threads or swiftly moving machine parts, it is obvious that more light is desirable. Scientists have demonstrated that a moving object seems to slow down as it becomes more brightly illuminated. This apparent "slowing down" is due to the fact that the eye is able to discern the object more quickly and a clearer impression is obtained. With good visual conditions, the operator of a machine works without hesitancy; he becomes confident of the action of his machine and of his own movements. With this greater assurance, he is able to increase his rate of production. Moreover, tension and nervous energy are relieved and wasted effort is reduced.

Thousands of laboratory tests made at the lighting research laboratories at Nela Park, Cleveland, revealed interesting results. A "speed of reading" test showed that as the illumination was increased from one to 16 foot candles, the speed of reading increased very rapidly. If the illumination in a textile mill is only four or five foot candles, it is obvious that the gains in speed of vision will be very marked for each additional foot candle supplied in the room.

Light and Production

These laboratory tests bear upon the fundamentals of light and production. Practical tests made in various factories have borne out the facts established by the laboratory tests. In 14 factories which vary widely in the character of operations, tests have shown that when the illumination was raised on the average from 3.4 foot candles to 12 foot candles, the average increase in production was over 16 per cent.

An interesting angle on one of these tests was brought out by varying the illumination from week to week and noting the corresponding change in production. During the week when the illumination was increased, the output increased accordingly; when the illumination was decreased, production fell off. This happened not only once, but several times. Controlling the amount of light varied the production rate to an extent that the most skeptical of observers were convinced.

Another interesting test was performed last year by a large group of factory engineers in Chicago. The engineers took their places at small electric drill presses at which they were required to drill holes in bakelite sheets according to specifications from a working drawing. They were given time to make trials so as to become familiar with the operation before the test began.

The illumination supplied upon the work was controlled by dimmers so that various degrees of illumination would be available. The level of illumination of 20 foot candles was supplied at first and when the work was completed, the time required for the job was noted. Each piece of work was tested for accuracy and workmanship.

As soon as this test was finished, the illumination was immediately reduced to two foot candles so that the worker's eyes would adapt themselves to the different intensity while preparations were made for the next test. The same operation was then performed under the lowered level of illumination.

In order to compensate for improved skill in the second operation due to experience gained from the first test, a third test was conducted under the 20 foot candle level. The average results of the first and third tests were compared with those of the second test. It was found that the men produced 30% more under 20 foot candles than under two foot candles, thus verifying the results of the many tests made under regular working conditions in factories.

This Installation in Dyeing and Finishing Plant Gives Illumination Intensity of 8 Foot Candles

Dr. Andrew McBride, chief of the New Jersey State Labor Department, is an ardent advocate of better lighting as evidenced in a recent interview. His experience with factory problems and workers' welfare has convinced him of its value. He says: "We place illumination and the worker's eyes in the very forefront of all our considerations and deliberations relating to industrial welfare. A complaint was lodged with the labor department charging excessive fatigue due to poor ventilation. An investigation soon disclosed that the trouble was not due to lack of ventilation but to insufficient lighting. Improved illumination was recommended and subsequently installed. Almost immediately the erstwhile fatigue element vanished. Not only that, but an increase in production of from 12 to 16% was achieved as a result of the new illumination."

Reduced Labor Turnover

Each year sees new experiences resulting from better illumination in industries. At the Detroit Carrier Company, a division of the Kelvinator Corporation, good lighting was responsible for a reduction in labor turnover. The illumination was raised from about five foot candles to 15 foot candles, or more. After the new lighting had been in use, it was found that labor turnover was cut in half. No other factors such as the scale of wages, hours, or working conditions which would affect labor turnover were changed. Lighting was the only change made.

While the result in labor turnover was very gratifying, the executives were pleased to learn that the insurance company which carried their liability insurance granted a reduction of 10% in their rate after making a survey of the plant when the lighting system had been installed.

New Lamps Brought Out

The past year witnessed the introduction of the new line of inside frost lamps. Over 100,000,000 of these lamps were manufactured and shipped, which is strong evidence of their universal acceptance. For many years, the value of frosting the bulbs on the inside was appreciated, but the usual frosting process rendered the glass extremely fragile. This difficulty was completely overcome and the long-sought goal was realized in the new line of lamps.

The increase in efficiency of lamps brought about a higher brightness of the filament. The inside frost diffuses this brightness, producing a better quality of light without any great loss in efficiency. While the old method of frosting the outside of the bulb was satisfactory, a heavier frosting was necessary for the same diffusion and any dirt accumulations or fingermarks upon the bulb were extremely difficult to remove. The new inside frost process leaves the outside of the bulb smooth. Dirt and dust do not accumulate as readily and the cleaning of the bulb is much easier.

A new rough-service lamp was brought out during the last year for use in places where there was excessive rough usage of the lamps. The mill-type lamp was previously used for this kind of service. Since this was supplanted by the new inside frost line, and since the new 50-watt lamp was not particlarly adapted for rough-service, the new lamp was introduced. It is supplied only in the inside frost bulb and the filament has a special mounting to insure protection when subjected to jars and rough handling.

The new line of lamps consists only of five standard sizes—25, 40, 50, 60 and 100-watts, and supplant the multiplicity of sizes and types which have existed heretofore. With many sizes and types of lamps, manufacturing stocks, warehouse space and transportation charges presented problems. The standardization of five lamps has eliminated these problems and the result is that the cost of lamps was reduced 4% during the last year, while the reductions in price since 1914 total 44%. As a result, we are now able to enjoy light at a cost lower than ever before in the history of industry.

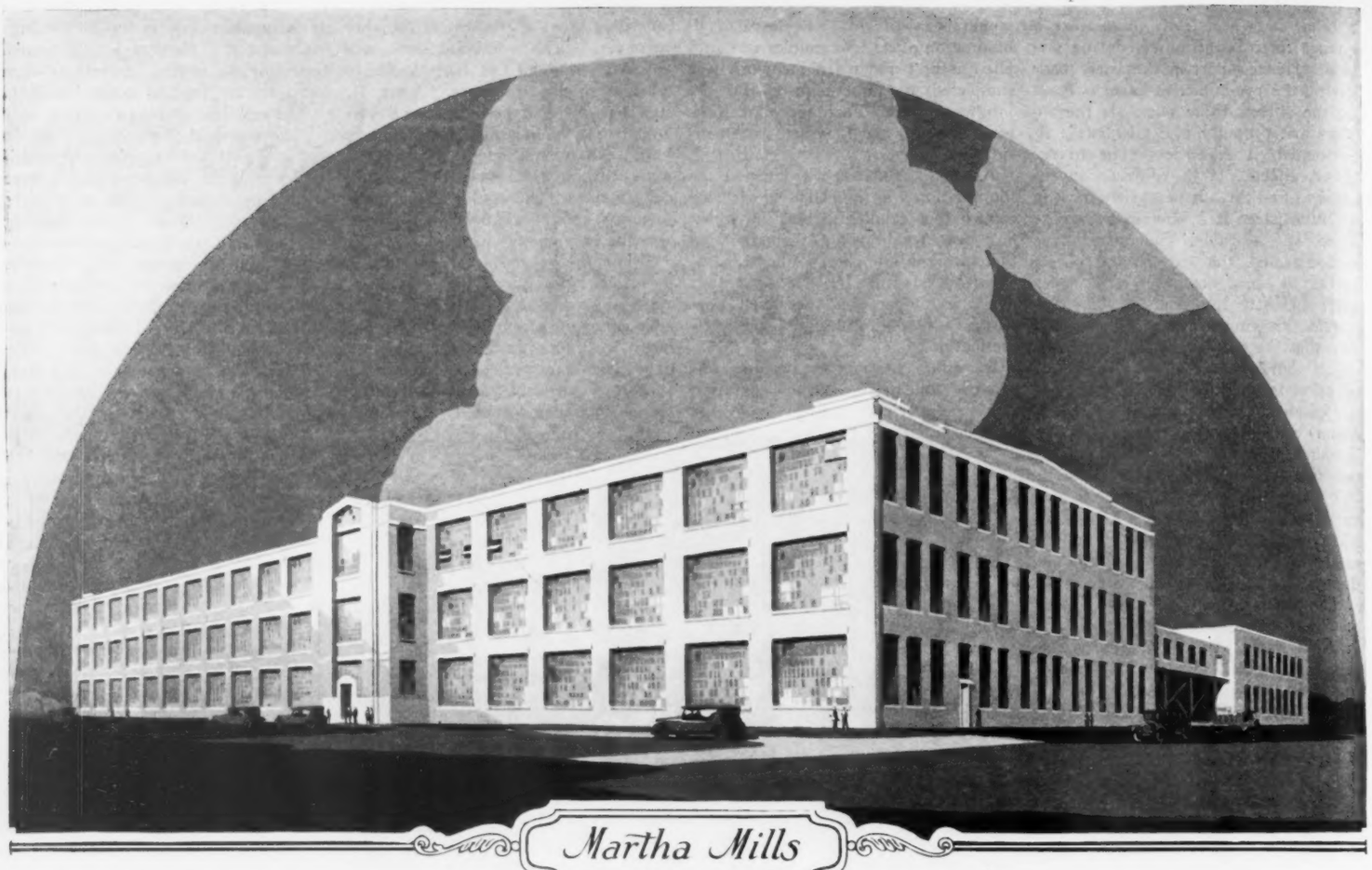
In view of the advantages that are brought about by better lighting and the fact that it is low in cost, it is quite obvious that poor lighting is really an expense. One accident caused directly or indirectly by poor lighting may cost more than the operation of a modern lighting system for a year. Moreover, losses are constantly suffered through lowered production, spoilage, and labor turnover.

Standardization of Layouts

The last year has seen a marked tendency toward a standardization of lighting layouts for industrial plants. In textile mills where large machines are permanently installed, the placing of outlets for lighting units is made according to the location and arrangement of machines. In other places, where machines are not permanently placed and when the ceiling is 10 to 12 ft. high, the practice of spacing the outlets 10 ft. apart and mounting the units 10 ft. from the floor is usually followed. The standard RLM dome equipped with a 200-watt white bowl lamp is generally used when this spacing and mounting height are used.

While there has been no outstanding development in new reflecting equipment for mill lighting, the comparison of the last year's progress in illumination reveals a growing appreciation of what better lighting is and what it will do, with the result that the accepted standard reflecting equipment is being specified on new installations, and is rapidly replacing obsolete tin cone and similar inefficient reflectors.

The National Electric Light Association ended a most successful educational campaign in the early spring on industrial lighting. A second campaign, which is a continuance of the one held earlier in the year was begun last fall and is still in progress. The dissemination of data and information which the electrical industry has evolved by research and by tests will no doubt be of great value to industry in general. The growth of knowledge of illumination will assist in bringing better lighting conditions to the 75% of our factories that are inadequately illuminated. Thus a step will be taken toward the elimination of waste, the assurance of greater safety from industrial accidents, and the improvement of working conditions which will in turn react with greater profits to industry.



Martha Mills

This new 32,000 spindle tire fabric mill at Thomaston, Georgia, is a unit of the Thomaston Cotton Mills, owned and controlled by the Hightower Interests.

This mill will operate solid time, day and night, for a period of several years, on cord fabric for the B. F. Goodrich Rubber Company, exclusively.

Competitive conditions in every branch of industry demand a constant improvement of quality as well as manufacturing economy.

The ability of the Martha Mills to supply the needs of the B. F. Goodrich Company, is a reflection of its strategic labor power and materials location, the experience of its officials, and the savings in operation cost due to manufacturing layout and building construction.

Companies that contemplate building new mills, or additions to old mills, find much for serious thought in the savings offered by mill locations in the south.

Data pertinent to your particular product's manufacturing cost in the south, gathered from our own independent surveys, will be sent you upon request, gladly and without obligation.

See Also CONSOLIDATED TEXTILE CATALOG

ROBERT AND COMPANY

ATLANTA INCORPORATED GEORGIA

Architects and Engineers

REPORT OF MILL CONSTRUCTION FOR 1926

New Mills, Enlargements and Improvements

General Conditions Reflected in Decline of New Construction Projects—Numerous Large Additions Made by Old Established Firms—Transfer of Machinery from North to South Continued—Period of Constructive Progress Predicted for 1927

THE year 1926, which will long be remembered as a dull period in the history of textiles, did not come to a close without witnessing some really important constuction work. While the actual establishment of new mills, of which there were only 178, the lowest number since 1897, falling below the previous low mark of 186 new mills started in 1924, portrayed very truly the general condition of the industry, a number of long established firms felt justified in erecting additions to their mills and equipping them with new machinery.

The movement, started a year or two ago, of transferring all or part of the equipment of various northern plants to the South, was continued during the past year and was responsible for the carrying out or planning of a number of big projects in the Southern states, Alabama, Arkansas, Georgia, Kentucky, Louisiana, North Carolina, South Carolina, Tennessee, Texas and Virgina benefitting by a change of this kind.

Of great importance was the merging of some of the large companies in the cotton, knit goods and silk industries, a few consolidating their equipment in one enlarged mill, with the object of lowering manufacturing costs.

That Californians are endeavoring to take advantage of their favorable location on the Pacific, across which large shipments of raw silk from the Orient are sent, may be seen in the fact that interests which already operated a weaving mill there, added new looms, dyeing and finishing equipment, and branched out to the spinning and hosiery knitting fields.

Although the year will not be noted in records as being one of great expansion in the actual spindleage and loomage of the country, it will perhaps stand out as the general house cleaning time of the era as, due to over growing competition, manufacturers have been forced to give earnest thought to problems of conservation and diversification to which, had things moved along more smoothly, they would have given little attention. This augurs well for the future and there is a general belief that this year promises to be one of constructive progress.

COMPARISON OF NEW MILL CONSTRUCTION OF LAST 12 YEARS

	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915
Cotton	34	40	39	74	57	46	89	74	29	52	51	24
Wool	9	17	15	38	34	36	30	54	24	24	23	19
Knitting	52	84	57	73	94	103	59	84	120	97	113	111
Silk	37	38	22	26	24	31	71	61	49	86	60	25
Rayon	8	11	..	..	..	..	..	..	..	..	..	..
Miscellaneous	38	49	53	21	29	26	15	16	27	38	33	40
	178	239	186	232	238	242	264	289	254	297	280	219

New Cotton Mills

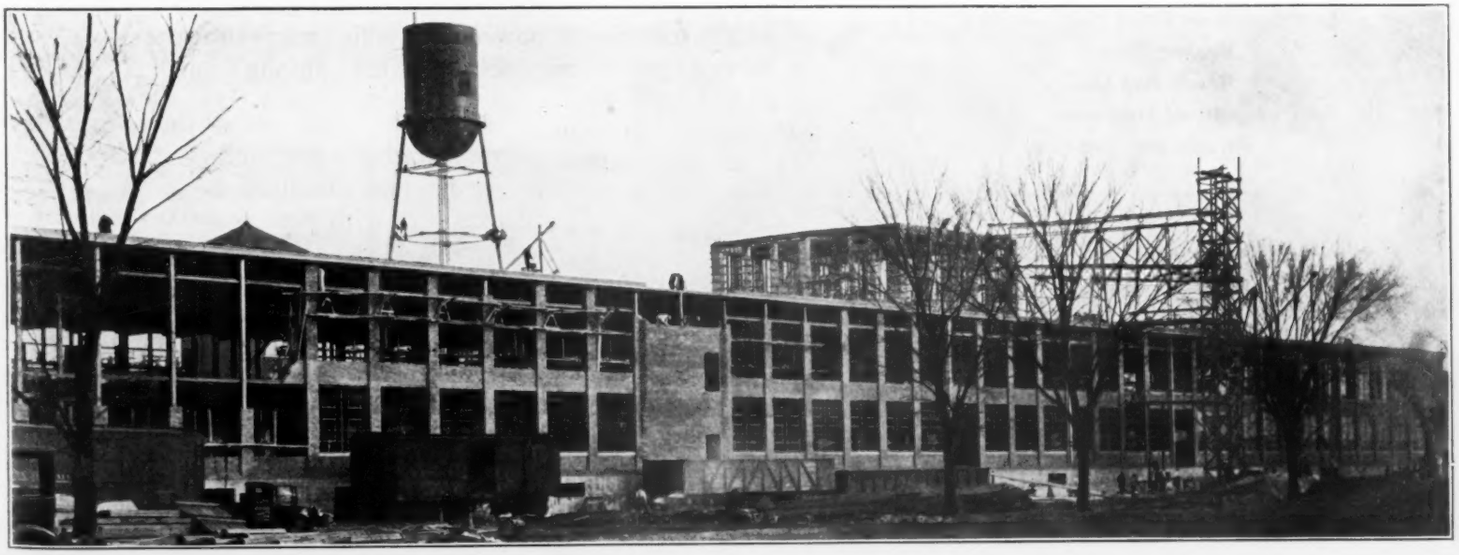
The South continued to hold the lead as far as new mills were concerned, having had 21 mills added during the year. Seven of these new plants were established in North Carolina, five in Georgia, two in Alabama and two in South Carolina, while Arkansas, Kentucky, Louisiana, Tennessee and Virginia each had one mill added. In the number of enlargements and improvements also, North Carolina was most favored, 38 existing mills having made additions to plants or equipment. Next in the South came South Carolina with 23, Georgia with 16, Alabama with 14 and Texas with 9 expansion projects reported.

Of great interest was the 50,000 spindle addition to the mill of the Cannon Mfg. Co. at Kannapolis, N. C. and the construction of a new power plant there; the erection of the Martha Mills, the new tire fabric unit of the Hightower interests, at Thomaston, Ga., equipped with 30,000 spindles; the building of a new unit at the plant of the China Grove (N. C.) Cotton Mills Co., to house 30,000 spindles and plans made for the installation of an additional 7,000 spindles in that plant at a later date.

Mill construction caused by transferring of machinery from the North to the South was carried out by the Goodyear Clearwater Mills which built an extension to the former Paragon Mill at Cedartown, Ga., to house 18,000 spindles, earlier purchased from the Essex Mills, Passaic, N. J. Dean & Sherk moved their plant from Detroit to Lawrenceburg, Ky. Thomas Henry & Sons, Inc. erected a plant at Nashville, Tenn. and moved 20,000 spindles and 130 looms from Philadelphia to the new location. The Appleton Mfg. Co. proceeded with the expansion started last year, involving the moving of 30,000 spindles from Lowell, Mass., to Anderson, S. C. Galvez Mills, at Galveston, Texas, equipped their new plant with 13,500 spindles, formerly operated by the Nobska Spinning Co., Taunton, Mass. The Ninety-Six (S.C.) Cotton Mills built an addition for approximately 20,000 spindles purchased from the Fairhaven Mills, New Bedford, Mass., while the Seneca Co. transferred 20,000 spindles from the Ann and Hope Mills, Lonsdale, R. I., to Seneca, S. C. Branch plants were established in the South by the Crompton (R. I.) Co., at Waynesboro, Va., and by L. H. Gilmer Co., of Philadelphia, at Shreveport, La.

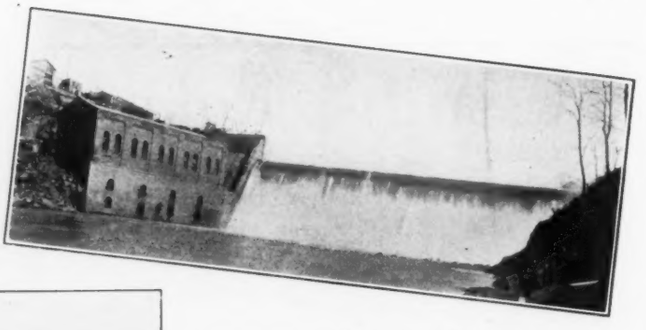
In the North there were ten new mills established, all comparatively small. They included two plush mills, a webbing and braid plant, damask

(*Continued on page* 425)



Goodyear Clearwater Mills, Cedartown, Ga.; a New Tire Fabric Mill for Goodyear Tire & Rubber Co.

Worth Mills,
Fort Worth, Texas
16,000 Spindles
Tire Fabric Producers



Tennessee Eastern Electric Co.
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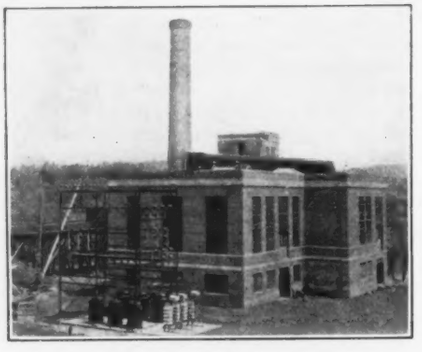

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New Chester Lace Mill Units in Operation

Additional Buildings and Alterations to the Old Units Is an Example of the Modern Tendency—Old Bleachery Demolished and Replaced by New Unit With Latest Equipment—Additions Made Without Closing Plant

*By Frederic J. LeMaistre**

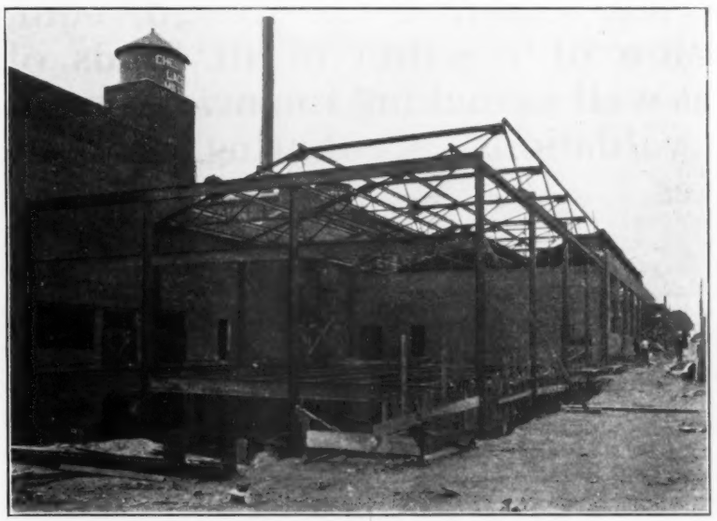
GROUND was broken Mar. 2, 1926, for alterations and additions to the Chester Lace Mills, Chester, Pa., which comprise one of the outstanding mill construction projects of the last year. The new units added are as follows: a bleachery, a filter and engine room, a weaving and warp building, a winding building, and a finishing building. Alterations were made to the old finishing building, old weaving building, and other sections of the plant. The contract will be practically completed about Feb. 15, 1927.

The original old stone mill was built in 1875, on a rectangular site measuring 300 x 234 ft. The old weave shed was added in 1898. In 1909, the present company purchased the property from T. I. Birkin & Co., of England, and from that date it has been operated by its present owners, The Chester Lace Mills, of which Charles A. Turner is president. Some additions and alterations had been made under the new management; but the old plant, on the whole, was typical of plants built at the time it was constructed.

Plant Capacity Doubled

The necessity of replacing old equipment, the need for major repairs to the buildings themselves, and the desire for additional space suggested a survey of the present plant and its facilities. The outcome of this study resulted in the selection of new and modern textile equipment and the adding to the plant of the necessary buildings to enable the production to be doubled; also the bringing up to date of the old section of the plant to conform with the new program. With these additions, there is available space for 17 additional lace looms, which double the present installation. There will also be ample space for logical expansion. All units of the plant are balanced with respect to the weaving capacity; that is, the output of 34 looms. The floor area of the old mills is 50,720 sq. ft.; the additions give 71,833 sq. ft., making a total of 122,553 sq. ft.

All the new units are interconnecting, two-floors high, with basements wherever the topography permitted. All construction work was done without interference with plant operations. The bleachery alone is of concrete construction, the remainder of the units being of structural steel, slow-burning construction type. The latest practice in the design of industrial buildings was followed throughout, and the more important innovations are mentioned below, under suitable headings. This company manufacturers machine-made lace curtains, and the flow of the raw material in process through the plant is in accord with latest factory practice. Designs and supervision of construction were under the direction of Charles D. Hickman and Frederic J. LeMaistre, associated engineers, of Philadelphia, Pa. William Provost, Jr., of Chester, Pa., was the general contractor.



Weaving and Warp Building Under Construction

New Bleachery

The new bleachery is a one-story and basement concrete building, 97x40 ft., of 3,880 sq. ft. floor area. The basement is 10 ft. 6 in. high and the first floor is 20 ft. to the roof. The roof is of wooden truss design with a skylight running the entire length of the building. In this skylight there are two Allen turbine ventilators which keep the atmosphere in the room free from fumes and steam. To one end of the building is a kier pit with space for four kiers. On the first floor, space has been reserved for two complete bleachery ranges. In the basement is a storeroom for chemicals, a bleachery solution storeroom, and a men's washroom and toilet room.

The new bleachery equipment, furnished and installed by R. C. Jefferson & Co., of Philadelphia, consists of a Jefferson kier, a complete range of Rodney Hunt slack washers, and an extractor. The washers are operated by individual motors. Piping to and from the washers is below the operating platform, there being no unsightly or bothersome overhead piping or wiring. This modern building has ample light, and operating conditions are ideal for the kind of processes that are carried out. The brick walls are painted with "Barrelled Sunlight" which adds to the general attractiveness of the rooms. The chemicals from the storeroom are transferred by means of a small elevator to the floor above, and the bleach solution from the concrete storage tanks in the basement is pumped to a small delivery tank on the first floor. The distant electric control of the pump is located conveniently with respect to the chemic washer. The bleach solution room is ventilated by means of a small fan, thus keeping chlorine vapors out of all operating rooms.

The gray goods enter the bleachery through pot-eyes from the mending room above, and travel over the bleachery balcony directly to the kier, or to the washer, as the case may be. Interposed between the kier and the extractor are two dead stillages of a size suitable for their special requirements. The goods leaving the extractor are loaded on the customary trucks and wheeled through the covered bridge to the tenter room in the finishing building. As a safety feature, the contents of the kier are discharged to a blow case in the kier pit, and not directly to the sewer, as is the customary practice.

Filter and Engine Room

The filter and engine room is a small building 39 ft. 6 in. by 41 ft. 6 in., or 1640 sq. ft. in area. It adjoins the bleachery and is between it and the old power house. In this room is located the main switchboard of the plant, and a 96 in. Roberts ver-

New Finishing Building and Winding Building; Connecting Bridge Over Driveway

* Hickman & LeMaistre, Engineers, Philadelphia.

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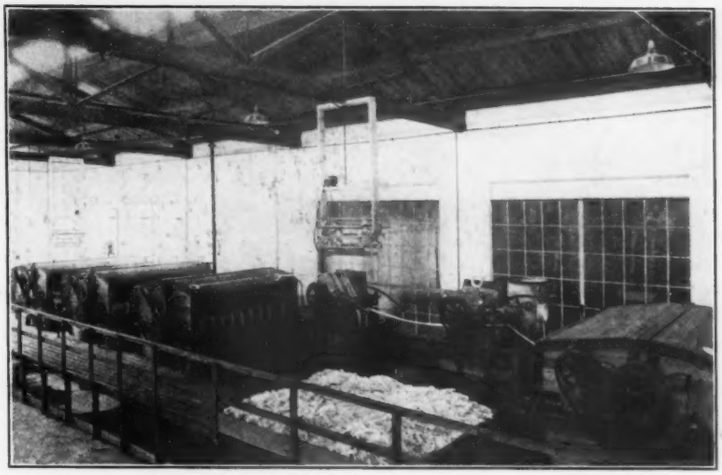
tical water filter, with space for a second unit. This filter was furnished and erected by the Roberts Filter Manufacturing Co., of Darby, Pa., and supplies filtered water for all bleachery operations. Space has also been allotted for such engine room additions as may be required by future expansions. Superimposed over the building is a 50,000 gal. sprinkler tank furnished and installed by the Pittsburgh Des Moines Steel Co., New York. This gives the necessary fire protection for the entire plant, and replaces an old wooden storage tank, which with its supporting tower, was dismantled to make way for other improvements. Provision has been made for motorizing all new textile equipment in accord with best factory practice. The lighting of the new and old mill, within and without, conforms to the latest standards.



Bleachery Interior Showing Center of Rodney Hunt Range

Weaving and Warp Building

The new weaving and warp building is a structural steel unit of sawtooth roof design without central columns. An innovation was adopted in glazing this unit; corrugated actinic glass was specified for the sawtooth roof and plain actinic glass for all other windows. Another novel feature is the installation of unit heaters suspended from the roof near the side wall and 9 ft. from the floor. These replace the conventional floor radiators. This room has the best equipment for modern illumination and is free from glare. The absence of pillars enables the placement of textile equipment where wanted. The new weave room is 190x56 ft., of 10,640 sq. ft. floor area, and adjoins the old weave room. By dismantling the side wall of the old weave building, the company will have a single room with a total floor area of 21,260 sq. ft. for looms. The floor is a monolith of concrete and space of about 8 ft. has been reserved for an aisle encircling the two rows of looms; both those already in place and machines to be placed. This aisle is to be used by trucks to deliver warps and spools to the machines, and to receive the finished curtain material for delivery to the elevator on which it will be transferred to the mending room above.

The warp room is 108x56 ft., of 6048 sq. ft area, and is of similar construction to the new weave room. This concrete floor is covered with maple flooring. The basement below, of the same dimensions and 11 ft. high, is divided by a brick wall into two rooms, one for the storage of jacquard cards and the other for yarn. A sidewalk elevator is used to transfer the incoming yarn from trucks to storage. From this point, yarn is transferred to other sections of the mill, using the elevator common to the winding building and this building. At the extreme end of the warp room is a balcony with a floor area of 1176 sq. ft. for use by the bobbin boys.

Winding Building

The winding building is a structural steel unit of slow-burning construction type, with two floors and a basement, each 97 ft. 6 in. by 50 ft., with a floor area of 4875 sq. ft. The basement is to be used as a general machine shop and for storage. The two floors above provide space for the winding machines and allow for future additions. An elevator runs from the basement to the two floors above. This building is also glazed with actinic glass, and has communicating passageways to the adjoining buildings.

New Finishing Building

The new finishing building unit is similar in construction to the winding building. Each floor is 130x54 ft., of 7020 sq. ft. area. The basement is reserved for dead frames; the first floor is for tenters and miscellaneous laundry equipment, and the third floor is for the finishing department proper. An elevator runs from the basement to the two floors of the new building and also serves two floors of the adjoining old brick building.

Subcontractors connected with this development are as follows: Roofer, H. H. Ward, Chester, Pa.; heating and plumbing, Turner Plumbing Co., Chester, Pa., electrical work, Harry A. Hynes, Chester, Pa.; painting and glazing, Nothnagle & Roser, Chester, Pa.; steel sash and doors, Allison Steel Products Co., Chester, Pa.; structural steel, Belmont Iron Works, Philadelphia, Pa.; fire protection, Automatic Sprinkler Corp. of America, Philadelphia, Pa.; elevators, Otis Elevator Co., Philadelphia, Pa.; unit heaters, Ilg Electric Co., Philadelphia, Pa.; fire and Kalamein doors, Penn Metal Co., Philadelphia, Pa.; metal partitions, Sanymetal Products Co., Philadelphia, Pa.; miscellaneous iron work, Humphrey & Co., Philadelphia, Pa.; and reinforcing steel, Kalman Steel Co., Philadelphia, Pa.

Electrification of Laurens Cotton Mills

Cloth Mill Changed Over to Electric Drive—Roller-Bearing Motors Installed—Individual Drives on Pickers and Spinning Frames—Group Drives for Cards and Drawing Frames, Two and Four-Frame Drives for Roving Frames

*By W. T. Jenkins**

ONE of the mills that was changed over to motor drive within the last year is the Laurens Cotton Mills, Laurens, S. C. Until the change was made, the mill was driven by a cross compound engine, and there were a number of factors which entered into the decision to discard the engine and to install electric drive. The engine was not large enough to drive properly the entire mill, owing to the addition of machinery; furthermore, the engine was twenty-five years old and certain repairs were needed. But these difficulties could have been overcome at an expenditure less than that required to motorize the mill. The outstanding advantage of electric drive was the deciding factor. The greater flexibility and the more uniform speed with consequent increased production were fully recognized.

The mill has four floors and is of slow-burning mill construction, containing approximately 45,000 ring spindles and 1200 looms making shirtings. In discussing the electrification of any steam engine driven mill, it is difficult to point out features that have not already been written up any number of times. There are, however, several unique features in this installation that may be of interest.

The substation was built by and is the property of the Blue Ridge Power Co. Power is received at 44,000 volts and is transformed to 550 volts for use in the mill. The main feeders run underground in fiber duct imbedded in concrete, and a disconnecting switch is installed at each end of these feeders. It is usual practice to install a switch on the substation end to disconnect the entire mill load. The additional disconnecting switch in this installation is a double throw switch beside the switchboard. It may at some time be desirable to install a generator to be driven by the old engine for emergency service.

The switchboard is located as near the center of distribution, and as near the substation, as possible. The oil circuit breakers are of the automatic type, mounted 5 ft. in the rear of the panels on pipe frame work. Each breaker is operated by a handle on the front of the panel; the bell-cranks and operating rods are mounted in a specially constructed trench in the concrete floor. Steel plates cover these trenches. With this method, it is impossible for dirt to accumulate and hinder the operation of the bell-cranks. With the old method of mounting the cranks and rods on top of the floor, there is a tendency for trash to collect under and around them which is difficult to sweep up. There is the additional important advantage of having a clear floor in case it is necessary to work on the equipment back of the board. Fig. 1 shows these steel plates.

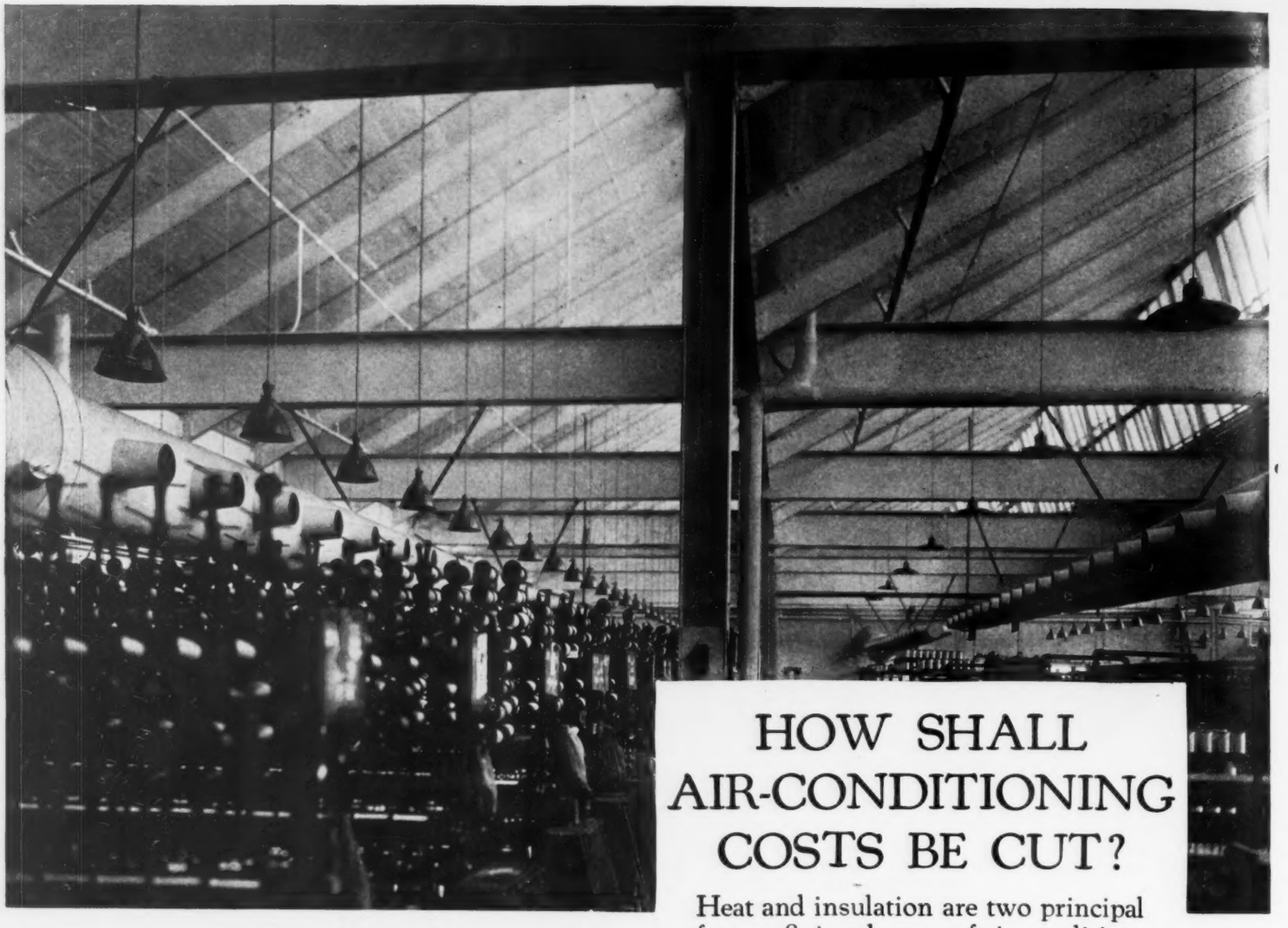
From the oil circuit breakers, separate circuits are run to each of the larger departments; picking, carding, spinning and weaving. Trouble on one circuit, therefore, means that only one department is shut down at a time.

Mill Lighting

Three lighting transformers are installed on the back wall of the mill, and are supplied through one panel on the switchboard. This circuit is held at constant voltage by an automatic induction regulator. The transformers are located one toward each end of the mill and one in the center, thus making short lines to the centers of lighting distribution. It requires large wires to carry the low voltage lighting current, and the decrease in length means lower cost of installation. This regulator may be seen by reference to the accompanying photograph, at the rear left of the switchboard.

Reflectors are RLM dome type, which are used throughout, the drops being made of rigid conduit, with cushion type hangers. In connection

* Lockwood, Greene & Co., Inc., Atlanta, Ga.



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with the lighting layout, the following information may be of interest: Carding department: lamp mounting height 12 ft. 6 in.; lamp size 150 watt; illumination in foot candles 3.75. Roving department: lamp mounting height 12 ft. 6 in.; lamp size, 150; illumination in foot candles 4.8. Spinning department: lamp mounting height 12 ft.; lamp size 150; illumination in foot candles 7.0.

Motor Equipment

The Allis-Chalmers Manufacturing Company's Timken roller bearing motors are installed throughout the mill. In selecting the roller bearing type induction motor, considerable thought was given to the apparent advantages of this type of motor over the standard oil-ring or sleeve-bearing type. These apparent advantages are protection of motor windings and elimination of oil leakage. The protection of the motor itself is of great importance, and every effort or means should be taken to safeguard against failure. A motor failure is at the best a very costly affair. The elimination of oil leakage is a matter in which every cotton mill man is vitally interested. The possible elimination of oil spotted goods or seconds is a question to be given some thought.

Although motors in cotton mills are not mounted directly over machines, there are times in trucking the yarn or cloth under motors when oil will leak from the bearings, doing costly damage. A thoughtless operator may leave for the night some of the product under a motor, with the almost sure result of damaged goods. There are two other advantages claimed by some for this type of motor bearing; namely, less friction and therefore higher efficiency, and elimination of oiling. Neither of these advantages were given consideration in the selection of roller bearing motors for this mill. The protection of motor windings and the elimination of oil leakage were advantages carefully weighed against the necessary additional cost of the roller bearing type motor, and this added investment was clearly warranted.

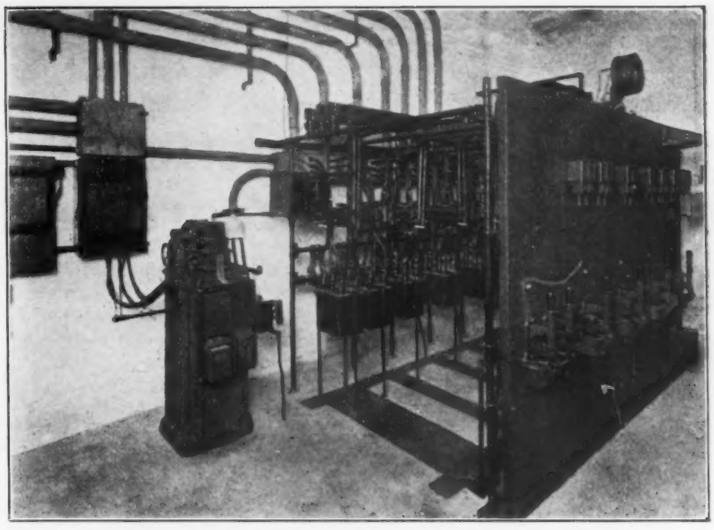

Fig. 1. Five-Panel Switchboard and Induction Voltage Regulator

Picker Room Drives

The picker room is driven by individual motors mounted on "A" frames. The breaker pickers have double beaters and a double extended shaft; a 10 h.p. motor is used with each one. These pickers have heavy cylinders which require a relatively long time to bring from rest up to speed. To provide for this requirement, starting compensators are used with motors on these machines. The accelerating time is thus decreased with very much decreased probability of throwing off a belt.

The finisher pickers are driven by 5 h.p. motors having magnetic type switches. These switches, together with starting compensators for the breaker pickers, are grouped together on the wall. Push button control stations are located on the pickers. This arrangement of starters keeps the switches off the machines, which vibrate quite badly at times; it makes easy the maintenance and inspection of the starting equipment; and gives an installation of unusually neat appearance.

The cards and drawing are driven in groups by ceiling-mounted motors. The roving frames are driven by two and four-frame motors. Where four-frame motors are used, they have double shaft extension, one extension being long with an outboard bearing. This arrangement decreases the overall length of the motor and gives the flexibility of the so-called Universal motor.

Spinning Frame Drives

The spinning frames are equipped with individual motors and Allis-Chalmers texrope drives. The motors are mounted on specially designed bases which are secured to the floor. These bases were carefully designed to raise the motor well off the floor, and they are open at the ends to give ventilation underneath. It was feared that closed bases would tend to rot the wooden floors, and the openings in the bases were made to overcome this tendency. The openings also make it possible to clean out lint which accumulates.

The spinning frames are of Fales & Jenks manufacture, and are equipped with standard outboard bearing frame used with overhead belt drive. The changeover to motor drive was accomplished by removing the pulleys and installing the grooved sheave on the shaft. The motor fits in under the outboard bearing frame, making a simple and neat installation. Guards fastened to the floor are provided to protect the drives from oil and dirt, and to guard against accident to operatives.

The motor control in general consists of compensators for motors that are 15 h. p. and larger, and magnetic type across the line switches with "start-and-stop" push button stations, or master switches, as in the case of individual spinning motors. Ahead of each control device is a nonfused disconnecting switch, as called for by insurance regulations.

Worthy of mention is the little master-switch. This switch is mounted on the end frame of the spinning frame and the handle of the switch is clamped to the shipper rod. When the shipper rod is moved to, say, the "start" position, the little switch is thrown into contact position, thereby closing a circuit through the magnetic switch, causing it to close, throwing the motor directly across the line. Each control device gives under-voltage and overload protection.

Although sufficient time has not elapsed since the completion of this installation to determine definitely the exact percentage of increase in production due to motor drive, with the average speeds slightly increased and constantly maintained, it is safe to prophesy a substantial increase.

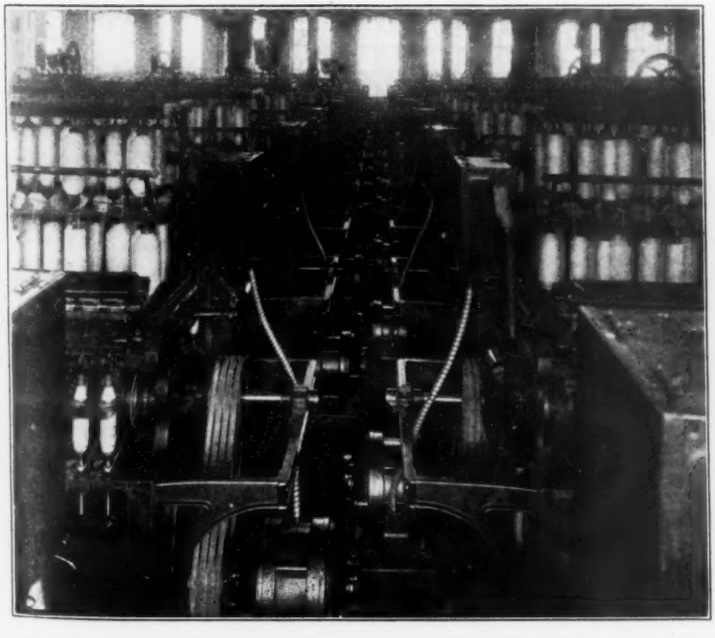

Fig. 2. 5 H.P. Motors With Roller Bearings Driving Spinning Frames With Texrope Drives; Guards Removed

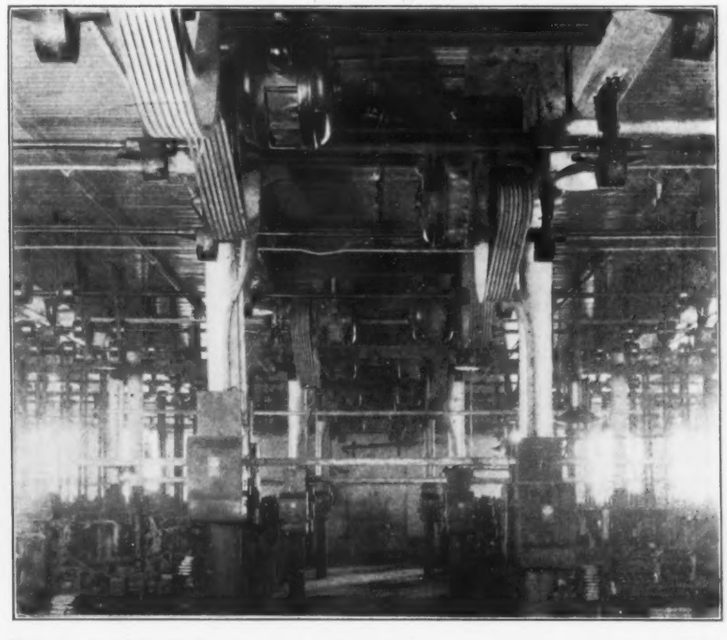

Fig. 3. 30 H.P. Roller Bearing Motors Driving Line Shafts in Weave Room Through Texrope Drives

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ENLARGEMENTS and improvements were made in many New England mills during the last year to increase manufacturing space and revamp power facilities. Among the developments carried out under the supervision of Chas. T. Main, Inc., engineers, Boston, were a new dyehouse and boiler house for A. H. Esten, East Greenwich, R. I.; a new building for the Greenwich Mills, East Greenwich, R. I., to provide a better manufacturing layout; an addition to the picker building of Harry T. Hayward, Franklin, Mass.; reorganization of finishing departments at Pontoosuc Woolen Manufacturing Co., Pittsfield, Mass.; improvements in boiler house of S. Slater & Sons, Inc., Webster, Mass.; the replacement of existing boiler plant at the Newichawanick Co., So. Berwick, Me.; and the building of a yarn dyehouse and filtration plant for the Pawtuxet Valley Dyeing Co., Phenix, R. I.

Dyehouse for A. H. Esten

The dyehouse and boiler house erected for A. H. Esten, East Greenwich, R. I., are two adjoining buildings separated by a brick wall. The dyehouse is 102 ft. long by 47 ft. wide, one story, and the boiler house is 38 x 48 ft., one story. The dyehouse is of slow-burning mill construction, with modifications to adapt it to the operations carried on in it. One-half of the building is used for dye kettles, and the other half for bleaching and drying. The kettles are set in a machine trench of liberal size, with provision for drainage and the separation of boiling liquors from the ordinary drip. The ventilating system is a combination of hoods over the machines and a fan and heater delivering warm air into the room. Such systems, properly designed, will keep the kettle room free from steam and fog. In addition to yarn dyeing equipment, there is a complete peroxide bleaching outfit for yarns. The yarn is dried in a dryer located in the same room.

The boiler house contains 2 h.r.t. boilers built for 165 lbs. pressure, and set in suspended settings. Power is furnished by a reciprocating engine, the exhaust from which is used to heat water for manufacturing purposes. The hot water is stored in a wood tank on the roof from which it is piped to the various machines. Water can also be heated by direct steam if desired. The buildings are sprinkled and lighted in the usual way. Provision has been made to permit of extensions without disrupting the present organization.

The Greenwich Mills

The new building for The Greenwich Mills, East Greenwich, R. I., was erected to provide space for a reorganization of the existing machinery and provide for a small increase. The building is 112 ft. long by 104 ft. wide, three stories high, of slow-burning mill construction, with steel beams and good story heights. The bays are wide and the spans unusually long, thereby reducing the number of columns to a minimum. The floors are of heavy plank with maple top. The windows are large galvanized steel sash units with special glazing to give the maximum daylight. A monitor on the middle span of the top floor makes the lighting conditions in that story unusually good.

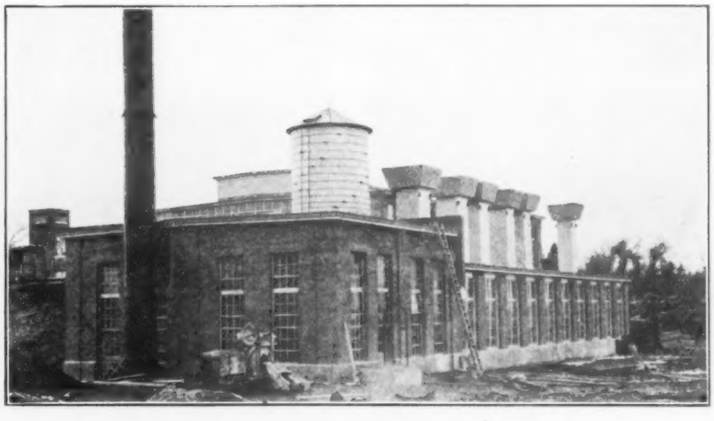
Addition to The Greenwich Mills

The stairs and elevator towers are of ample size. The toilets are conveniently arranged and of good sanitary construction. The new mill is connected to the existing buildings by a two-story bridge over the street, which facilitates trucking and communication between the departments. Provision has been made so that the building can be extended in the future without disorganizing the machinery arrangement or interfering with production.

Pipe coils operated on an automatic vacuum system are used for heating. The lighting system is a combination of general and intensive illumination, using Holophane shades, and is thoroughly up-to-date in every respect. All floors are served by a freight elevator of 4,000 lb. capacity, with a platform of ample size to meet all requirements. Automatic sprinklers and yard hydrants give ample protection against fire. The first floor is to be used for winding, the second for weaving, and the third for dressing and mending.

Harry T. Hayward

An addition to the mixing picker building at the plant of Harry T. Hayward, Franklin, Mass., has just been finished, completing a building the first part of which was erected some time ago. The addition is 61 ft. long by 54 ft. wide, one-story high, and is of slow-burning mill construction. For the time being, it will be used for the storage of stock, but it will eventually be devoted to machinery. The building is heated with pipe coils and protected by automatic sprinklers. It was so designed and constructed that additional stories can be added in the future.



New Dyehouse and Boiler House of A. H. Esten

Pontoosuc Woolen Mfg. Co.

Last year the Pontoosuc Woolen Manufacturing Co., Pittsfield, Mass., put into operation a new building for carding and spinning, which made available space in the existing buildings and permitted a reorganization of the wet and dry finishing departments. These finishing operations were all brought together in one building and arranged to reduce the handling to a minimum. Considerable remodeling was done in the old building; larger windows were installed; floors were leveled and new top floors laid; and a new elevator shaft was built to provide for a large modern electric-driven elevator.

Direct-connected motor drives were used for many of the machines. A new horizontal return tenter was installed, with housing and ventilation to secure the most drying capacity. This step, together with the work completed the previous year, puts this plant in excellent physical condition, and makes it capable of producing its lines of products very economically.

S. Slater & Sons

Changes in the boiler house of S. Slater & Sons, Inc., Webster, Mass., consisted of the removing of three small h. r. t. boilers, and replacing them with two 90-in. h. r. t. boilers in which hand stokers were installed; also the changing over of the remaining old boilers from oil burning to coal burning. Hand stokers were used in all cases. The new boilers were set singly with suspended settings. The change necessitated some flue changes and a small amount of piping. The work was carried out without interfering with the production of the plant, which was quite busy during most of the changes.

Newichawanick Company

It became necessary last year to replace the existing boiler plant of the Newichawanick Co., So. Berwick, Me., because it was worn out. It was decided to change the location in order to reduce and facilitate the coal handling; but because of the limited land available in the yard and the extremely steep slopes, the problem presented many difficulties. The logical location was already occupied by a four-story storehouse, but the conditions were such that it was possible to remodel the two lower stories of this building so as to make a boiler room of the first story and low storage room of the second story.

The second floor was replaced by a reinforced concrete floor at a dif-

Mill Flooring and Roofing That Does Not Decay—

There are few places where ROT raises its ugly head more insistently than in a textile mill where wet processing is carried on. Mill men as a rule take replacements as a matter of course. Ordinary wood soon fails under the unrelenting attack.

Of vital importance to mill men then, is "Wolmanized" Lumber because it ***does not decay.*** This lumber is impregnated with the powerful Wolman Salts, long noted for their preservative qualities.

Obviously, it is ideal for flooring and roofing in dye houses and wet processing rooms — also as roofing in spinning and weaving rooms where high humidities prevail.

Here are a few of its advantages —

1. The characteristics of the wood remains unchanged.
2. No discoloration that affects painting.
3. The preservative "stays put" due to unusual fixation qualities.
4. Treating operation flexible according to individual requirements.
5. Fire-retardant.
6. A lower-cost lumber may oftentimes be specified.
7. Can be painted, varnished or stained.

"Wolmanized" Lumber is bound to be widely adopted for textile consumption. Already 3,000,000 ft. are in service in textile mills. ***Investigate***—why not write today?

AMERICAN WOLMANIZED LUMBER CO.

7 South Front Street Elizabeth, N. J.

"WOLMANIZED" LUMBER

ferent height, and the boiler room was entirely cut off in every way from the remainder of the building. Two h. r. t. boilers were installed and a new radial stack built. The boilers were equipped with hand stokers and piped to the existing system. Coal can be dumped from a side track some thirty feet above the boiler room floor into a coal storage pile outside of the boiler house door. The new boiler room is large enough to house one more boiler and a prime mover large enough to furnish power for the plant.

Pawtuxet Valley Dyeing Co.

During the year, the Pawtuxet Valley Dyeing Co., Inc., Phenix, R. I., made a substantial addition to its plant, erecting on the site of a wooden yarn dyehouse a new dyehouse to be used for both yarn and cloth dyeing and bleaching. The building is 124 ft. long by 55 ft. wide, one-story high, and is of brick construction with concrete floor and wood roof.

The work was carried on during the cold weather and presented some difficult problems, due to the fact that the old dyehouse was kept in operation while the new building was being erected over it. After the walls and roof were completed, the old building was removed, new machine trenches built, the machinery rearranged, and some new kettles added. Particular attention was given to hooding the kettles to eliminate steam and fog troubles from this room. This addition, together with the existing buildings, makes a most efficient unit for the dyeing, bleaching, and finishing of worsted and woolen yarns and fabrics, particularly worsted jersey cloths.

Filtration Plant

The Pawtuxet Valley Dyeing Co. has also just completed the installation of a filtration plant of 500 gal. per minute capacity. This consists of two units of Permutit closed filters in a building 23 x 42, of which the basement is used as a settling chamber. The first floor and basement of this building are of reinforced concrete, with brick walls above the floor, and wood roof. The water is given a two-hour alum and soda treatment in the settling basin, and then pumped through the filters into the mill supply line. Sludge removal equipment has been installed, which permits the settling basin to be cleaned without being drawn off.

The addition of a filtered water supply for the dyeing and finishing process at this modern plant is in keeping with the advanced methods employed by the management, and their desire to be in a position to give the trade the very best service.

Southern Mercerizing Co. Expands

Further Growth at Tryon Plant—New Wing, More Winding, New Conditioning Room and Laboratory

THE year 1926 witnessed the completion of further development in the plant of the Southern Mercerizing Co., Tryon, N. C., along the lines of increase in capacity, improvement in continuity of layout, and introduction of auxiliary equipment. A company which grows as rapidly as has this organization, always finds it difficult to keep its operations as continuous as might be desired and consequently the company has taken advantage of the latest stage in its expansion to rearrange the machinery in its different departments.

Southern Mercerizing Co., Tryon, N. C.

Following its enlargement program of 1925 when a wing was added to the building, the Southern Mercerizing Co. in 1926 completed another wing at the other end, 60 x 60 ft., one-story and basement. At the same time, the equipment was increased by 16 Sipp Machine Co. winders; 500 spindles of Foster winding equipment; and another 24-pole Smith-Drum mercerizing machine, making three 24-pole machines in all. The net result of this expansion is that the plant now has a potential capacity of 30,000 lbs. of single mercerized yarns per week.

New Conditioning Room

In the basement of the new wing, the company has installed a new solid concrete conditioning room, equipped with Bahnson humidifiers. This in itself is a marked improvement as the conditioning room was formerly located in the warehouse, whereas now it is directly under the winding room and reached readily by elevator. The packing and shipping room is also now located in this new basement.

At the same time that the main building of the plant was enlarged, the company availed itself of the opportunity to put on a monitor roof which has aided greatly in the lighting facilities of the mill.

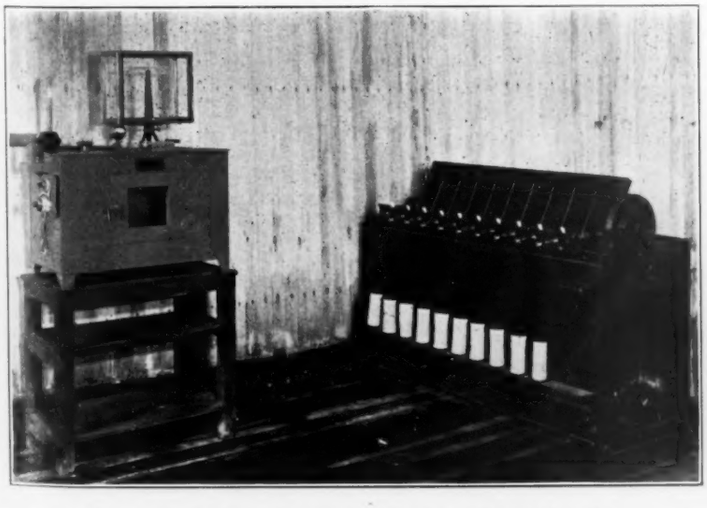
Testing Laboratory Installed

The removal of the conditioning room and the packing and shipping room from the warehouse has made available space in that building which the company is now utilizing for a testing laboratory. This is equipped with a Scott motor-driven breaking strength testing machine, a standard reel, a drying oven, scales, and a Suter seriplane which includes a six-foot blackboard. Through this installation, the use of which is under the direction of W. W. Burton, superintendent, who is a graduate chemist, the company is now able to test yarn for number, moisture, defects, etc., and is in a position to know exactly what it is receiving and what it is shipping. Another step taken to improve the quality of its output has been the assignment of one Foster winding machine exclusively to back winding in order that the work of the various employes may be checked.

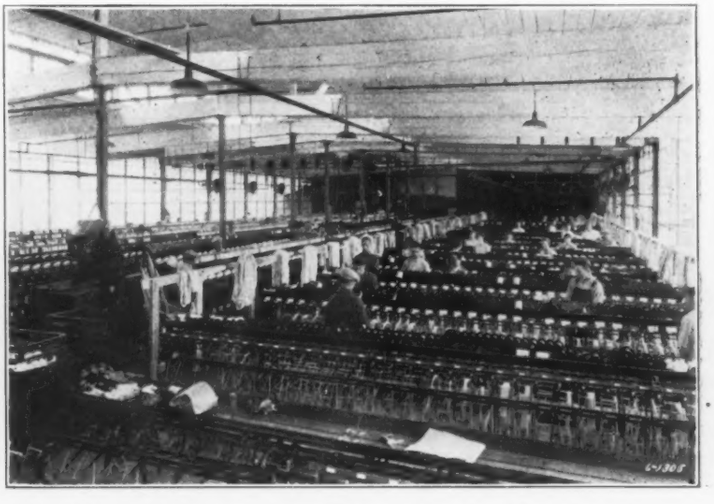
Miscellaneous Improvements

In addition to the expansion of the plant itself, the Southern Mercerizing Co. has made a number of other improvements, including the installation of Zaremba caustic recovery equipment; the addition of another unit of Hungerford & Terry water filtration system; the drilling of wells and installation of its own drinking water system for the cottages and the mill; and the addition of a sewerage system to the village. The latter now comprises 57 houses, a store, and a community house.

This entire program marks another and important step in the development of the company which dates back to 1909, when F. F. Bacon started mercerizing in a shed adjoining a hosiery mill located about two miles from Tryon. At that time he operated one machine and produced 100 lbs. of yarn per day. After successive stages of growth, W. C. Ward, at that time sales manager for the company, was admitted into partnership in the Southern Mercerizing Co. The company has always made a specialty of single mercerized yarns for hosiery splicing and plaiting but in addition it mercerizes ply yarns in fine counts and is equipped for gassing, bleaching and dyeing. It has developed to a stage where it now employs 250 operatives.

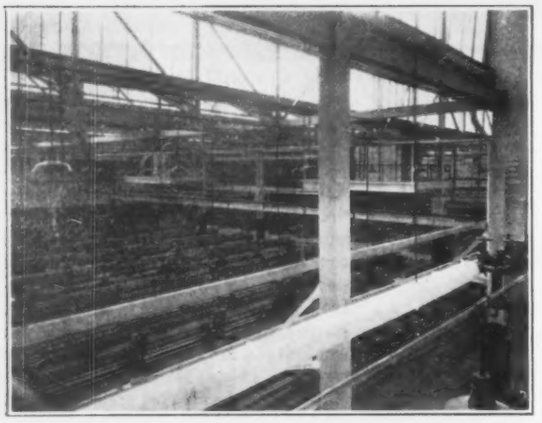


Corner of Testing Laboratory of Southern Mercerizing Co.

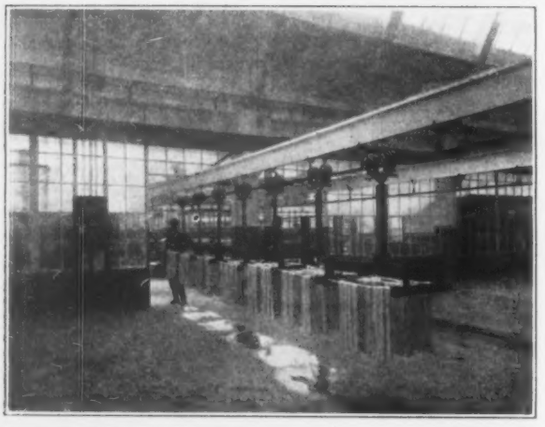


View in Reeling and Coning Room of Southern Mercerizing Co.

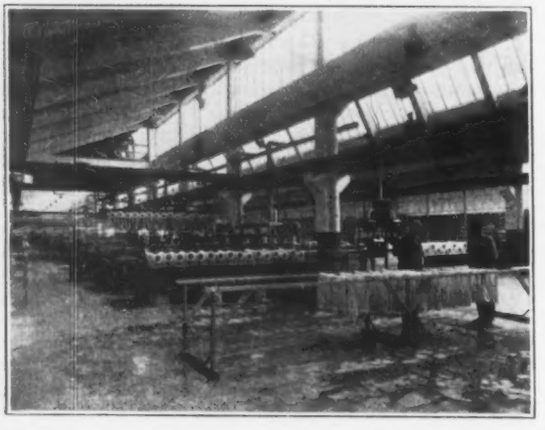
The New Bemberg



View of part of spinning room taken from overhead gallery before completion of installation. Roof trusses in this department span 80 ft.



This view shows the silk being brought on overhead trolleys from the spinning department into the washing department. Note the drip on the floor which is of acidproof mastic construction



View of washing room. In the foreground, a storage rack where silk is allowed to drip before going to dryers. At left of picture, a crane equipped with a load of silk ready to lower into one of the baths. After silk is immersed in the bath, the spools are rotated

By S. B. Lincoln of Lock

IN the last Annual Review Number of TEXTILE WORLD a description was given of the American Bemberg Corp. project at Johnson City, Tennessee, accompanied by a history of the organization of the company and a drawing showing the layout of the plant. It is now possible to show completed pictures, both exterior and interior, and to give a more definite description of the process and of interesting features of the construction.

Sequence of Operations

The raw materials used in the manufacture of Bemberg yarn by the cuprammonium process consist of cotton linters and various chemicals used as solvents in preparing the solution, and the successive steps in the process may be outlined briefly as follows:

1. Cleaning, washing and preparing of cotton linters.
2. Bleaching cotton linters.
3. Dissolving.
4. Mixing, Ageing and Filtering of Solution.
5. Spinning.
6. Washing.
7. Drying.
8. Conditioning.
9. Inspection.
10. Winding from skeins to spools.
11. Twisting.
12. Reeling from spools back to skeins.
13. Winding finished packages on cones or tubes.
14. Final inspection.

Requirements of the Process

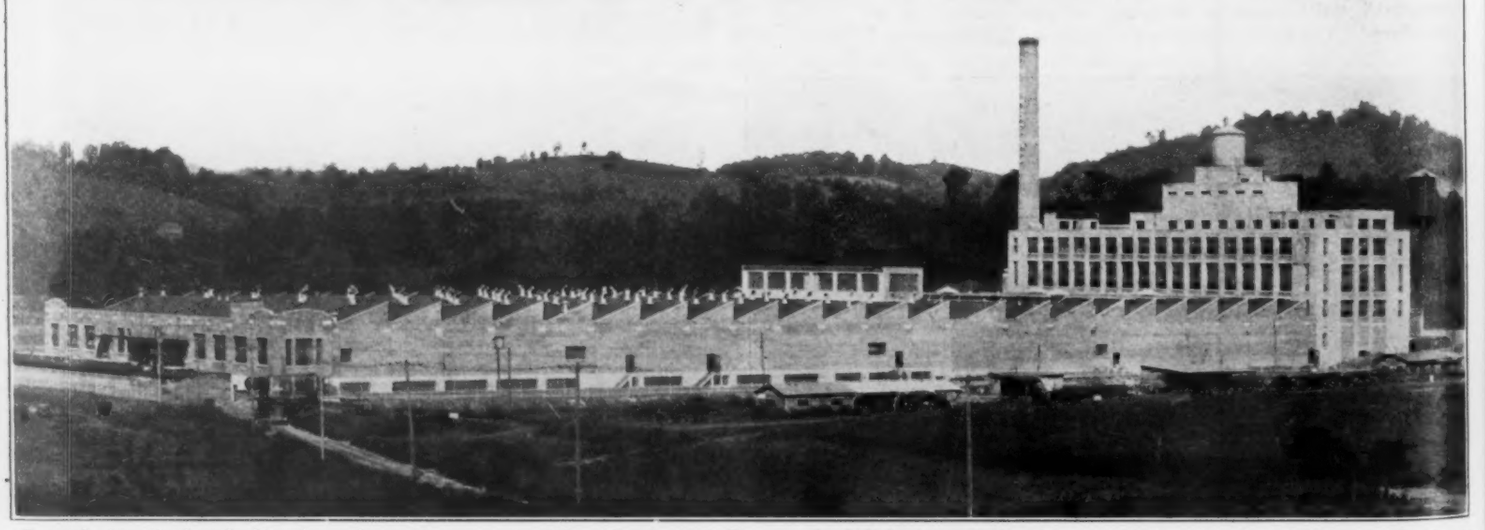
The cleaning, washing, preparing and bleaching of the cotton linters require special consideration in building design due to the arrangement of numerous heavy machines for the continuous movement of the linters through the various processes so as to insure uniformity in the treatment of the material throughout. This arrangement also insures that the handling of linters is done in the most economical manner. Drainage, steam and water piping must receive very careful attention.

The dissolving, mixing, ageing and filtering of solution present all of the problems in building design and equipment which go with a complicated chemical plant. The process involves many tanks of various sizes and for a great variety of chemicals. Various kinds of temperature control are involved for liquids and for air. Part of the space requires artificial cooling in summer, making it necessary to provide refrigerating machinery and to insulate building walls and ceilings.

Other departments in the chemical building require forced ventilation and temperature control. The piping arrangements are necessarily very complicated and there is a perfect maze of piping and valves to be provided. Many different materials of construction are necessary for piping systems, including large quantities of acidproof work which must be of lead.

The spinning department presented entirely different problems, since the machinery layout required clear spans of approximately 80 feet in width. This room required great height and perfect ventilation, as well as the best of daylight. Finally, all floors must be of acidproof construction, and equipped with a special system of trenches providing for the return of certain chemicals and their recovery for further use.

It should be explained here that it is in the spinning department where the solution is forced through a number of very fine orifices and where the silk thread is formed and wound into



General view of plant looking from the southeast corner. Note that face of all sawtooth skylight is vertical and not inclined. Chemical building is the 4-story building at the right. Near the center of the picture may be seen the fan rooms extending above the main roof level

Plant in Tennessee

wood, Greene & Co., Inc.

skeins on the spinning machines. The process used is the most interesting of any of the various methods by which artificial silk is spun. By the use of an ingenious method of stretching during spinning, it is possible to spin a single filament of the same size as that of real silk; for example, 150 denier consists of 112 filaments.

In the washing department, the wet skeins from the spinning room receive a number of baths in different solutions before going to the dryer room. This department is similar to a dye house for yarn dyeing, in which there is a great deal of drip on the floors from the various baths. The warm water used causes vapor to form in the room so that ventilation must be of the best, and construction must be such that it will not be damaged by the steam. The matter of condensation must be watched carefully so as to prevent dripping from the roof or sash.

In the drying department the yarn is dried in skein dryers, and this department presents no particularly difficult building requirements except that adequate height and ventilation must be provided.

Following the drying operation practically all operations are a duplicate of those on regular silk yarn, the machinery used being the same and the conditions to be met practically duplicating those in a silk-throwing plant.

Buildings for this purpose must have the finest of daylight, and since a high relative humidity is maintained, they must be provided in every way against condensation and dripping in cold weather.

The finishing operations on the yarn employ a large number of girls, and provision must be made for ample locker rooms, lunch rooms, shower baths, etc.

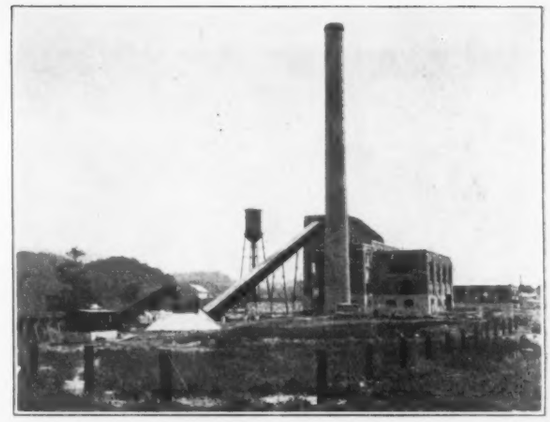
In addition to the general building requirements above outlined, certain parts of the process require very large quantities of steam and of hot water and also of cold water. The manufacturing processes by themselves do not require large quantities of power as compared with other textile industries, but the power required for pumping water, circulation of various liquids, for compressed air, and for various air conditioning apparatus make up a fairly sizable load.

Design and Arrangement

The above outline gives some of the problems which had to be met in the best manner in the design of the plant. The general outline for the buildings and the arrangement of the processes was prepared by Max Korff, vice-president and technical director of the American Bemberg Corp., as a result of his having been in charge as a technical leader for a long period of years in the development of the European plants of the company. During that time he was able to study the Bemberg process from the very beginning and throughout the experimental stages. Following this, Lockwood, Greeene & Co. were called upon to design the buildings in detail and to lay out the machinery and process piping.

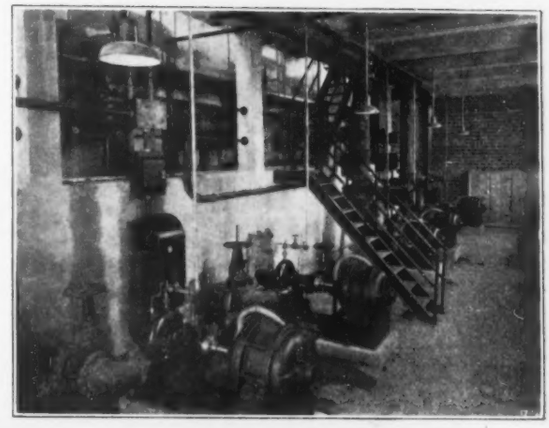
Taking the chemical building first, which is the five-story concrete building shown in the exterior picture, it was decided, on account of the heavy loads to be carried and the various wet processes involved, to make this of reinforced concrete.

For the balance of the main manufacturing building, beginning with the spinning room, which is in the one-story building immediately adjoining the chemical building, it was

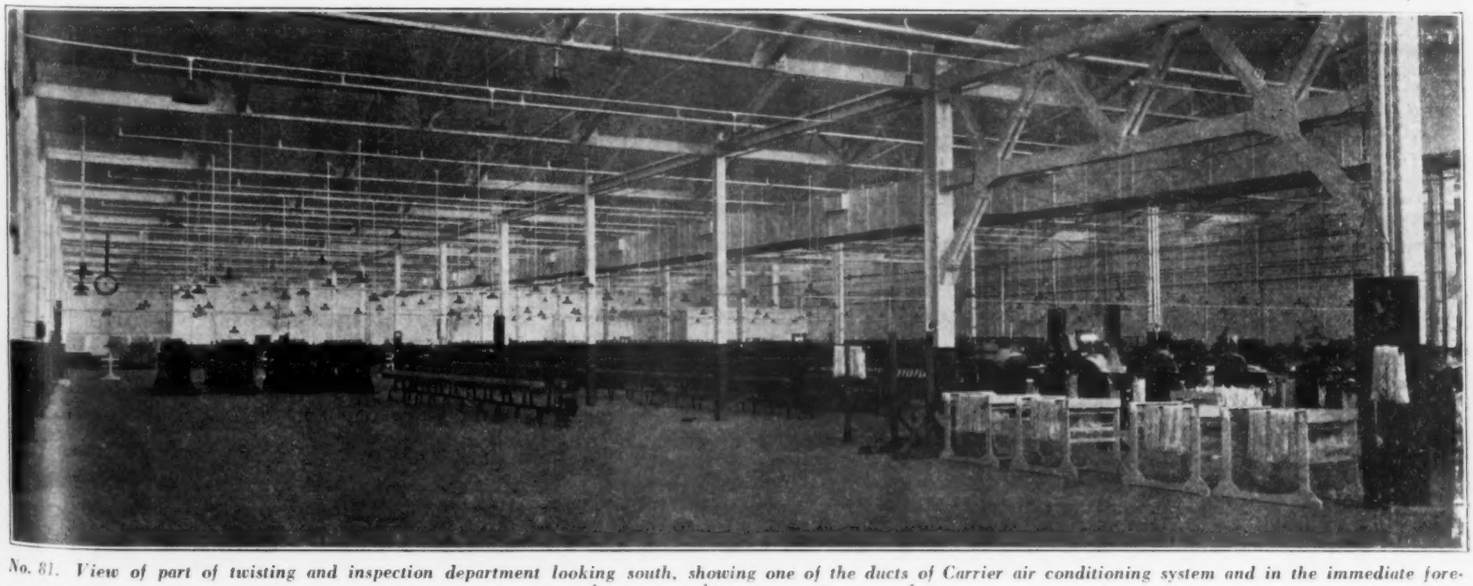


Power house and stack showing coal handling and storage system. Carpenter and machine shop in background. Layout provides for use of drag scraper for piling and reclaiming coal. Light colored spot at base of inclined conveyor is concrete ramp built for purpose of reducing depth of pit necessary for coal crusher and base of inclined conveyor

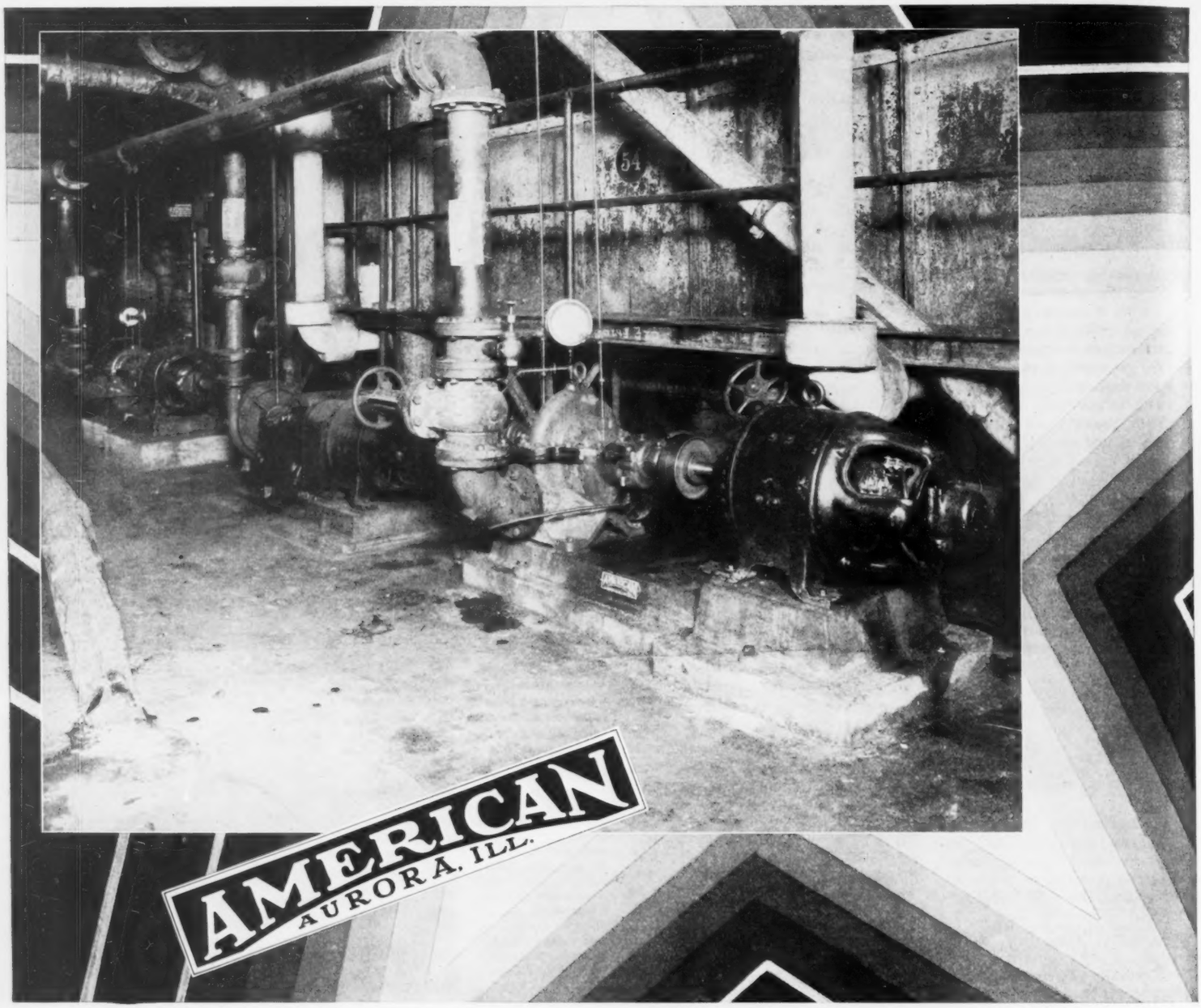
Interior of turbine room showing motor driven and steam driven air compressors and small turbine at the left of the picture. Two larger turbines in the background and switchboard at the right of the picture



Filter and pumping plant at river with capacity to filter and deliver 3,000,000 gallons of water each 24 hours. Starting from back, pumps shown are as follows: 1 wash water pump, 2 raw water pumps, 1 priming pump under stairway, and 2 out of a total of 3 clear water pumps. Clear well is located at the left of and immediately adjoining the pump room



No. 81. View of part of twisting and inspection department looking south, showing one of the ducts of Carrier air conditioning system and in the immediate foreground yarn may be seen on storage racks



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National Refining Company Uses "American" Pumps

PICTURED above is an installation of American Well Works pumps in one of the plants of the National Refining Company.

Many of the largest industries of this country use pumps bearing the name-plate of the American Well Works throughout their plants. The efficient handling of liquids in the complicated industrial processes of today demands pumps that are unusually simple in construction, steadfast and powerful in operation. As they are built to the specifications of engineers to meet particular requirements of industrial usage, it is but natural to expect unusual quality and performance from American Well Works pumps.

To aid you in specifying and selecting pumping equipment, the advice of a group of "American" engineers who are thoroughly conversant with industrial practices is at your disposal.

THE AMERICAN WELL WORKS

General Offices AURORA, ILLINOIS *and Factory*

decided that construction of steel frame with plank roof would meet all of the requirements, except in the washing department, which it was decided to make of reinforced concrete in order to avoid any possible rotting of the roof plank.

On account of the spans desired—80 feet in the spinning department and 40 feet elsewhere—some unusual features of steel design were necessary, and vertical trusses immediately behind the skylight sash provided for the requirements of the span in the most economical manner. It was decided to frame the saw-tooth skylights with the glass vertical on account of the trusses above mentioned, and because this made a more rigid and economical framing than is possible with the inclined skylights.

Provision made against condensation from the roof was unusually complete and included 2" cork insulation over the entire washing department and 1" of cork insulation over all other departments where artificial humidity is provided. All of the skylight sash in those departments where artificial humidity is maintained are double-glazed with air space between the glass and with condensation gutters provided throughout. All of the walls in rooms having artificial humidity have the backing on the inside face of the wall made up of hollow brick, thus providing air spaces in the wall and additional insulation.

Direct Sunlight Eliminated

The provisions above noted for the prevention of condensation also make the working space very cool in summer, and in this connection it will be noted from the photograph that in all of the sawtooth portion of the building there are no windows in the outside wall except small ones provided for toilet rooms. This keeps all direct sunlight away from the windows of the building, and the plant was so arranged that skylights face due north, so that in the hot summer weather there is no direct sunlight falling on the glass of workrooms anywhere in the one-story building. It has been found that in the hottest days in summer the interior of the plant is delightfully cool at all times.

The washing department has a special ventilation system whereby warm air is blown in at intervals along one side of the room and large quantities of air are exhausted by disc fans in the face of the sawtooth skylights. In all departments beyond the dryers, artificial humidity is maintained as well as cooling in summer by means of central station humidifying and cooling apparatus installed by the Carrier Engineering Corp. and including recirculation of air during the heating season. Fan rooms and air conditioning equipment are located in the fan room above the roof of the main structure and immediately adjoining the conditioned rooms. Temperature and humidity are under automatic control and the closest regulation is maintained.

In a portion of the one-story building a basement is provided of flat slab concrete construction, and owing to the slope of the ground the larger part of this basement is entirely above ground and for this reason is well lighted and ventilated by large outside windows. In this basement are located a large cafeteria and separate locker rooms and shower-baths for girls from each department, with total provision for accommodation of about 1,200 girls.

Mechanical Features

Owing to the large uses for steam, it was found that a large boiler plant would be required regardless of whether or not power should be generated. This being the case, it was found cheaper to install non-condensing turbines, using exhaust steam for heating water and for various process uses, than it would have been to purchase electrical power, although the rates are very low at the point where the plant is located.

This is a separate and very complete power plant building, arranged, like all other features of the plant, to provide for future expansion to several times its present size. The power plant is equipped with 3 400 h. p. Springfield boilers with space in the building for a fourth boiler to be installed, the boilers being equipped with Sanford-Riley stokers. The power plant has 2 750 k. w. General Electric turbines, non-condensing, direct-connected to 440-volt alternating current generators. The turbine room also contains a small turbine for Sunday use and two large air compressors, one steam-driven and one motor-driven, and an ammonia compressor used in connection with the refrigerating system.

Boilers are set at the second floor level and an interesting feature of the plant is a trucking passageway directly under the ash hoppers of the boilers so that a motor truck with metal body is driven directly under the hoppers for the removal of ashes, from which point they may be taken out and used in building roads or at other points where needed around the property.

A very complete coal storage and handling system was installed by the Alvey Ferguson Co. of Cincinnati, including a track hopper, inclined feeder, drag scraper installation for piling, storing and reclaiming coal, coal crusher and inclined belt conveyor with horizontal run over the bunker. There is a steel bunker extending the entire length of the boiler house over the firing floor with motor-driven weigh larry delivering coal directly to each boiler.

There is a large tunnel connecting the basement of the power house with the basement of the chemical building, and in this tunnel all the necessary service pipes to the building, including steam at various pressures, hot and cold water, compressed air, cooling water, etc., are delivered to the manufacturing building without running out of doors.

Filter Plant

A filter plant is located at a distance of about 1,600 ft. from the power house and chemical building and on the bank of the Watauga River which adjoins the property. The filter plant has a daily capacity of 3,000,000 gallons in each 24 hours and includes a large sedimentation basin, open sand filters, clear well and pump room. All pumps are electrically-operated with direct-connected motors. The filtering equipment proper was furnished and installed by the Roberts Filter Co. of Darby, Pa. All pumping equipment was manufactured by the DeLaval Steam Turbine Co. The filter plant is equipped with a recording meter of the Venturi type for the purpose of indicating continuously the amount of water being pumped to the plant.

Machinery

So far as possible American-made machinery was used in the equipment of the plant. That part of the equipment which could not be obtained in this country was made in various machinery factories which are connected with the Bemberg company in Germany. All of the American machinery for the plant was purchased

A GERMAN ENGINEER'S IMPRESSIONS OF THE METHODS OF AMERICAN ENGINEERS, CONTRACTORS AND MACHINERY MANUFACTURERS

For some years I have followed and studied with great interest the work of the American engineering profession. I regret that before arriving in this country I had no opportunity to come in close contact with American engineering concerns and therefore was pleased to accept the offer in June 1925 to take charge of building the American Bemberg plant.

Today, after one and a half years cooperation with American engineers and a great many manufacturers of machinery, I feel justified and take pleasure in stating in addition to the report of S. B. Lincoln of Lockwood, Greene & Co., Inc., Boston, the following:

The American industrial engineering concerns occupy a deservedly high position on account of their unselfish cooperation with all engineering organizations. A well trained international technical staff is at their disposal which puts them in the position to accomplish most any contract presented to them, immaterial whether it is to build a simple textile factory, a power house or a complicated plant. The staff drawing the plans is exceptionally well organized and includes well trained specialists in every line; also by the entire staff working in co-operation it is made possible that every little detail is carefully considered, so that when the plans are sent to the contractor, not a single thing is left open or unsettled. The contracting concerns are placed by this in a position to speed their work without interference; therefore, the quick accomplishment of any large building is not surprising to those who had an opportunity to make themselves acquainted with the above mentioned organizations.

Material companies and machinery manufacturers, etc., show a willingness to respond promptly to all inquiries and orders whether large or small, demonstrating that their main object in business is to anticipate the needs of their customers.

Notwithstanding the fact that the erection of the chemical plant cannot be standardized, I am glad to state that most of the types of equipment and machinery are satisfactory for their requirements.

With a few exceptions the workmanship is very good. The designs follow closely the principle which calls for a machine that will do the work required of it and at the same time is reasonable as to price.

In conclusion I wish to say that in our case, in the erection of the American Bemberg Corp., Myron S. Falk, consulting engineer and vice-president of the A.B.C., and S. B. Lincoln of Lockwood, Greene & Co., Inc., Boston, have given their best experience in working out drawings and plans, and in placing contracts; while R. J. H. Worcester and Harold Hunter of Lockwood, Greene & Co., acting as resident engineers, controlled activity on the spot.

Further I wish to state that the rapid progress made has only been possible by the splendid cooperation and the unrelenting energy of the gentlemen mentioned, just as the exchange of experience between the American and the German engineers has perfected such ingenious solution of the various problems presented.

(Signed) M. KORFF.

LARGE TEXTILE MILL
ADOPTS
"SUPERHEATED AIR"
possible only with the
Ljungström AIR PREHEATER

ONE OF THE LARGEST MILLS recently contracted for LJUNGSTROM AIR PREHEATERS for their new boiler plant.

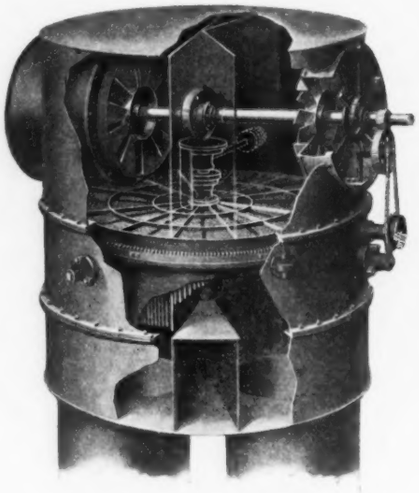
It was NOT because of fuel saving—although **15%** fuel by tonnage WILL be saved.

It was NOT because they wanted to burn cheaper fuel—although they WILL be able to burn a far inferior grade with ideal combustion conditions.

BUT—the purchase of LJUNGSTROM AIR PREHEATERS was made because their installation guaranteed a CONTINUOUS boiler performance under worst conditions. In other words if a boiler in a battery were to be out of order, ALL necessary power could be generated by the remaining boilers operating at the high rating made possible by "SUPERHEATED AIR."

A LJUNGSTROM-equipped boiler plant is ALWAYS ready and able on short notice to handle high peak loads heretofore considered impossible.

Every textile mill operator owes it to himself to thoroughly investigate the splendid financial benefits to be derived from the use of LJUNGSTROM AIR PREHEATERS.



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Contractors

Some of the principal contractors in connection with this work, other than those mentioned above for power plant and filter plant equipment, were as follows:

Excavation and roads—B. G. Young, Johnson City, Tenn.
Structural steel—Virginia Bridge & Iron Co., Roanoke, Va.
General construction—Hughes-Foulkrod Co., Philadelphia, Pa.
Fire protection—Holyoke Valve & Hydrant Co., Holyoke, Mass.
Heating and power house piping—Grinnell Co., Charlotte, N. C.
Light and power wiring—Huntington & Guerry, Greenville, S. C.
Process piping—Holyoke Valve & Hydrant Co., Holyoke, Mass.
Lead piping—Resisto Pipe & Valve Co., Cambridge, Mass.
Chimney—Rust Engineering Co., Pittsburgh, Pa.
Air conditioning—Carrier Engineering Corp., New York.
Air conditioning—Cooling & Air Conditioning Co., New York.
Air compressors—Chicago Pneumatic Tool Co.
Cranes—Bacon Co., Brooklyn, N. Y.
Switchboard—General Electric Co.
Elevators — Westbrook Elevator Co., Danville, Va.
Motors—Allis-Chalmers Co.
Shafting and belting—W. J. Savage, Knoxville, Tenn.
Smokeflue, tanks, etc.—Johnson City Foundry & Machine Co., Johnson City.
Vacuum pumps—Ingersoll-Rand Co.
Machine shop equipment — Summers Hardware Co., Johnson City, Tenn.
Monorail system—Louden Machinery Co., New York.
Fencing—Cyclone Fence Co.
Scales—Toledo Scale Co. and Fairbanks Co.

Engineers

As above stated, the plans were drawn, contracts let, and the work supervised by Lockwood, Greene & Co., Inc., of Charlotte, N. C. and New York, who also made all of the lay-outs for machinery and piping and arranged for the purchase of the American-made machinery, all under the direction of Max Korff, vice-president and technical manager of the American Bemberg Corp.

Plant Management

The management of the plant at Johnson City is under the direction of the following: Dr. Arthur Mothwurf, president and treasurer; Max Korff, vice-president and technical manager; Dr. Hugo Hoffman, chief chemist; Robert J. H. Worcester, chief engineer. Mr. Worcester was employed by Lockwood, Greene & Co. as their resident engineer in charge of the construction.

Important Enlargements by Callaway Mills

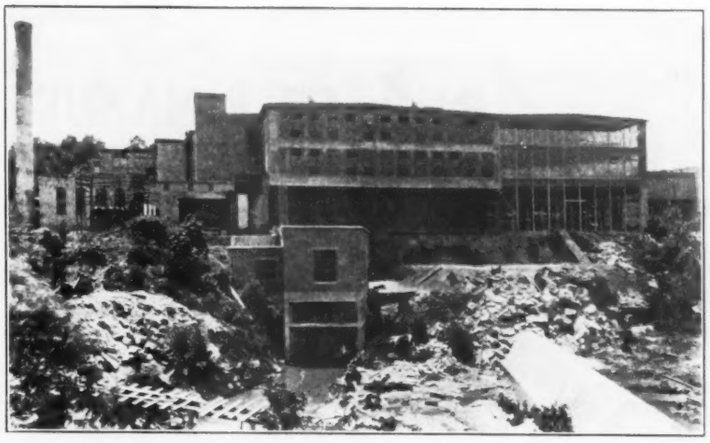
Large Program of Expansion Undertaken During Last Year—Rug Department of the Valley Mills—Improvements at Hillside Cotton Mills and Unity Cotton Mills—Additions to Main Building of Milstead Manufacturing Co. and Revamping of Power System

THE Callaway group of mills, located in LaGrange and other points in Georgia, completed during 1926, a large amount of construction and installation work involving improvements and expansions. Robert & Co., Atlanta, Ga., were employed as the engineers on the larger part of this work, to design and supervise the construction of the various units. A brief outline of some of the more important work which was undertaken is given in the following paragraphs:

Valley Mills

A development of unusual interest in southern textile circles during the last year was the new rug department of the Valley Mills, recently placed in operation in LaGrange, Ga. High grade rugs using cotton and jute are manufactured, these being produced in many artistic patterns of all sizes. A portion of the new plant is devoted to the manufacture of cotton wiping cloths.

The rug department of the Valley Mills had outgrown its original quarters in a portion of the two-story warehouse of the Hillside Cotton Mills. A new building was therefore required to take care of the large expansion necessary. The building erected is 357 ft. long by 80 ft. wide, two stories, with a monitor 223 ft. by 26 ft. This building abutts the old two-story warehouse, certain sections of which are still used by the rug department.



Milstead Manufacturing Co., Milstead, Ga., Showing Portion of New Addition, Power House, and Diverting Dam

Slow-burning, daylight construction was used, with cast-iron columns and steel beams carrying the second floor, and cast-iron columns and wood beams supporting the roof. Steel sash was used throughout with steel H-columns between to obtain the maximum amount of window opening. That a most pleasing result was obtained can be seen from the accompanying illustration.

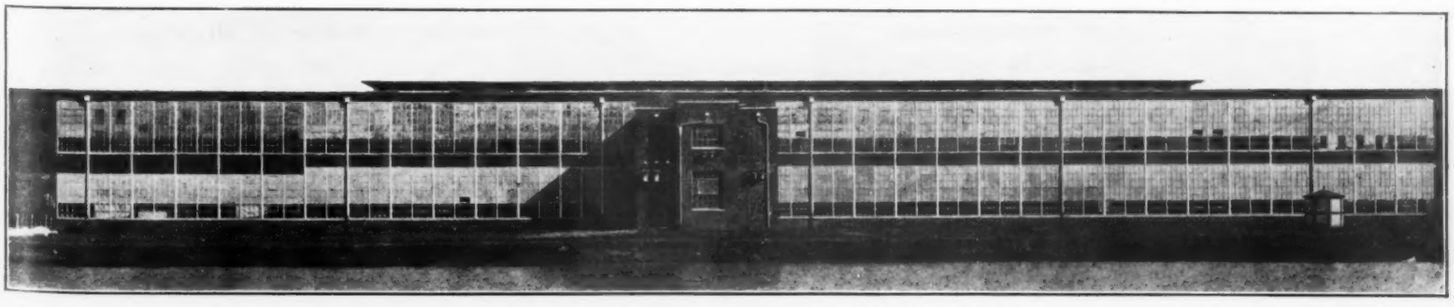
Wood floors were used throughout with the exception of a few bays on one end of the second floor where concrete was used. The tar concrete base for the first floor was laid directly on the ground with creosoted pine subfloor, with pine intermediate, and maple top. The most modern equipment was installed for the humidifier and lighting systems; the former consisting of Parks-Cramer high duty heads. The R. L. M. reflectors were used for all lighting, and units were so spaced with respect to the machinery as to obtain an even, general illumination, and in addition the necessary high intensities in the working planes. All wiring for power, lights, and humidifier head motors was installed in rigid metal conduit, thus insuring permanence and minimum maintenance cost.

A complete system of sprinklers was installed for fire protection, this work being done by the Grinnell Co., of Atlanta. The system was connected to the Hillside Cotton Mills system. A modern vacuum system of heating, with automatic temperature control, and with overhead branch coils was installed and so arranged that the steam supply is taken from the boiler plant of the Hillside Cotton Mills.

The most up-to-date machinery has been installed throughout for manufacturing purposes. Electric drive has been used throughout, with individual drives applied on many machines, including the jacquard and carpet looms. Power is supplied by the Columbus Power Co. from the substation also serving the Hillside Cotton Mills. T. C. Thompson Bros. Co. were the general contractors on the new building.

Hillside and Unity Mills

The Hillside Cotton Mills and the Unity Cotton Mills, LaGrange, Ga., are now completely on electric drive. Approximately 1,310 h.p. in new motors was installed in the Hillside Cotton Mills and 900 h.p. in the Unity Cotton Mills. A complete reorganization of the machinery was made in the Unity Cotton Mills which required some additional machinery in order to correctly balance the processes. At



Valley Rug Mills of the Callaway Group, LaGrange, Ga.

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Horizontal Return Tubular Boilers
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R. D. COLE MANUFACTURING CO.
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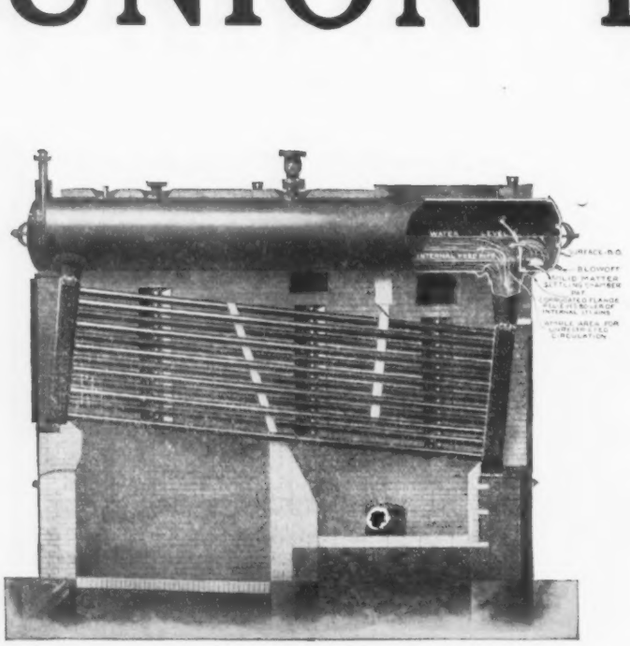


For nearly forty years the Union Iron Works have been concentrating in the development and manufacture of high pressure steel boilers exclusively and offer the Union Water Tube Boilers in both the horizontal straight tube longitudinal and cross drum designs and the vertical bent tube types, for pressures up to 400 lbs. in practically all sizes.

We have many textile installations giving highest satisfaction in every day service.

We also make Horizontal Return Tubular and Union Universal Fire Tube Boilers. This is one of the largest and most modern boiler manufacturing plants, with sales representatives in all principal cities to serve you.

UNION IRON WORKS
ERIE-PA.

the same time, a new and modern system of lighting was installed using the R. L. M. type of enameled steel reflectors.

By a careful study of the existing electrical apparatus in these mills, the engineers were able to utilize practically all of the old equipment, at the same time holding down to a minimum the amount of new buildings required for the substations. The original substations were of the indoor type with the transformers and all control equipment housed. Where necessary, the new and larger substations utilize the present buildings for the control equipment with the transformers located out of doors.

The Hillside Cotton Mills are served by two substations located at opposite ends of the building. One station is of 1500 kva. capacity and supplies power only for the weaving and a portion of the spinning. The transformers are 6-250 kva. arranged in two 3-phase banks, these being the old transformers formerly in both substations. The other substation is of 3,000 kva. capacity, arranged in two banks of 3,500 kva. transformers each. This station also contains the induction feeder voltage regulator for the lighting, as well as separate banks of lighting transformers for all of the Hillside and Valley Mills. Complete metering equipment was installed so that the power and lighting consumption of each mill is recorded.

This station likewise furnishes the power for all of the departments of the Valley Mills, and by the use of disconnecting switches an arrangement was worked out for both stations, so that in the event of failure of any transformer, the remaining capacity can be used to the fullest extent. As a safeguard against serious interruption, a spare 500-kva. transformer was purchased which also serves as a spare for the transformers at the Unity Cotton Mills. The accompanying illustration shows the interior of the No. 2 substation at the Hillside Cotton Mills. The compact arrangement shown enabled the present building to be used, and still made all apparatus accessible for inspection and removal for repairs. The Unity Cotton Mills' substation consists of three 500-kva. outdoor transformers with the control equipment, lighting transformers, and induction feeder voltage regulator for the lighting system installed in the old substation building.

In both mills practically the same types of drives were installed; two and four-frame double extended shaft motors for the roving, spinning, and twisters, with group drive for the cards. The pickers and numerous miscellaneous drives have individual motors. The installation of the electrical apparatus and wiring, including the substation work for these two mills, as well as for the Valley Mills, was handled under one contract by the J. M. Clayton Co. of Atlanta. All new electrical apparatus was furnished by the Westinghouse Electric & Manufacturing Co.

Interior of No. 2 Substation, Hillside Cotton Mills

Milstead Manufacturing Co.

During the early part of last year, two additions to the main building of the Milstead Manufacturing Co., Milstead, Ga., were completed, as well as a complete revamping of the power system. The additions to the building consist of a one-story extension to the weave room, 80 x 102 ft., and a two-story extension of the carding and spinning floors, 75 x 80 feet. Due to the topography of the ground, the two-story extension is an elevated structure giving additional space on the second and third floors. No additional space was required in the picker room, which is on the first floor, and this space in the new extension was, accordingly, not developed.

Steel sash with daylight construction was used, similar to that later adopted for the new rug department for the Valley Mills. This proved to be a most economical type of construction for the results desired. The added floor space was utilized, primarily, in the reorganizing of the machinery layout, with the addition of some new looms and other machinery to better balance the manufacturing processes. The Griffin Hodges Co. were the general contractors on the building construction.

Extensions and improvements in the humidifier and heating systems were also carried out, with automatic temperature control installed for the heating. A new modern lighting system was installed, using enameled steel reflectors and 150-watt mill type lamps.

Power Improvements

At the same time, a complete revamping of the power situation was undertaken. Formerly, the power was derived from three sources: namely, mechanical power from an old horizontal water wheel; mechanical power from the steam engine; and electrical power purchased from the Georgia Power Co. The waterwheel and purchased power were used at all times, while the steam engine had to be operated during a portion of each year.

Upon investigation it was found, as is often the case, that the existing water wheel equipment was obsolete and that considerably more power could be obtained from the water and head available with a properly designed plant. Accordingly, a new plant was designed which utilized the existing head-race or canal, as well as the penstock and a portion of the power house building. In order to obtain the full amount of head available at all times, a new channel was excavated for the river. This channel was approximately 553 ft. long. A gravity section diversion dam, 160 ft. long and 9 ft. high, was constructed of mass concrete; this dam served to divert the stream to the new channel, permitting the former channel to be used as an extension of the tail race.

A modern vertical shaft water wheel turbine of 1,000 h.p. under 40-ft. head, mounted in a plate steel flume, and with tapered draft tube was installed and connected to drive a 1,000 kva., 600-volt, vertical generator. A Woodward governor with motor-driven head and oil pump was installed. Enough power can be generated to carry practically the full load of the mill, but since very little storage of water is possible, the water wheel is dependent on the run of the river. A stand-by connection with the Georgia Power Co. was made, and an outdoor type substation, consisting of three 400-kva. transformers was built for this purpose. The switchboard was so arranged that any circuit can be supplied either from the waterwheel generator or the power company.

The accompanying illustration, taken before the construction work was completed, shows the new extension for the card and spinning room; also the hydro-electric plant, diversion dam, and substation. The entire mill was placed on motor drive, with all wiring installed in conduit, and the steam engine drive abandoned. The water wheel equipment was furnished by James Leffel & Co.; while all new electricity apparatus, including the generator, switchboard, transformers and motors, was furnished by the General Electric Co. The installation of the electrical apparatus and wiring was made by J. M. Clayton Co.

Houston Textile Mills Enlarge

Build New Mill and Practically Double Plant Capacity for Manufacture of Cotton Blankets

*By H. C. Swannell**

DURING 1924, the Houston Textile Mills, Houston, Tex., started operating their new plant, devoted exclusively to the manufacture of cotton blankets. At that time there were 3,876 spinning spindles installed and 100 looms, together with preparatory machinery. This plant is now being enlarged to provide for the addition of 2,964 ring spinning spindles, eighty 82-in., and twenty 92-in. looms, with necessary preparatory and auxiliary equipment. At the conclusion of this development, the capacity will be approximately doubled. It is planned to operate day and night.

Construction Details

Originally, the Houston Textile Mills consisted of a main building, one story in height, measuring 388 ft. long by 138 ft. wide; a warehouse 100 ft. by 125 ft., part of which was used as an opener room; and an office building. The warehouse is 50 ft. south of, and the office is 50 ft. east of the main structure. Fifty feet north is the new building, 356 ft. long by 107 ft. wide. This is also a one-story structure and of the same construction as the original unit. In general, the mill buildings are of standard daylight mill construction, having concrete footings and walls to window sill height. Above this the outside walls, except at the corners and toilet towers, are formed of steel sash windows fitted between cast-iron column pilasters. The windows extend to the roof. At the building corners and toilet towers, the concrete walls extend to the roof. Cast-iron columns are used on the inside for supporting the roof. These, as well as the cast-iron columns in the outside walls, are spaced 10 ft. 8 in. apart lengthwise of the mill, and 26 ft. across the mill.

Monitor roof construction was used. The main part of the roof, supported on 10 x 16 in. timbers, consists of 3 in. pine planking covered with insulating material and 5-ply tar and gravel roofing material. The monitor section is covered with the same material, but the sides are of steel sash. Approximately 25% of the roof area is taken up by the moni-

* J. E. Sirrine & Co., Engineers, Greenville, S. C.

tor. Standard floor construction, namely, hard pine rough flooring with 1 in. maple top, was used throughout.

The west end of both the old and new buildings has temporary outside walls, which will facilitate future extensions. A 50 x 100 ft., two-story section is also being added to the warehouse. Standard cotton warehouse construction with brick fire walls has been used.

Arrangement of Departments

In the new mill building, which is to be used for the preparatory processes, is housed the picking, carding, drawing, roving, spinning, winding, and warping machinery. The slashing, weaving, and napper rooms are in the old building. One section of the warehouse is occupied by the opener room, and the raw stock dyehouse is in the present building.

As to the process of manufacture, the raw cotton is taken from the bale and opened in the opener room, blown through galvanized iron tubes of 12¾ in. diameter to the picker room, where it is cleaned. Part of the cotton, however, is sent from opener room direct to the dyehouse, where it is colored and then sent to the picker room. After the picking process, the cotton passes into the card room. Cotton in the form of laps comes to the cards and leaves in the form of a sliver. It then goes to the drawing, roving, and spinning frames in succession. Yarn from the filling frames goes direct to the looms, and that from the warp spinning frames goes to the winders, warpers, slashers, and then to the looms. After weaving, the blankets are taken to the napper room, then to the cloth room, where the cutting, hemming, inspection, and folding are done.

Operation of the mill is dependent upon electric power, which at 3-phase, 60-cycle, 550 volts, is purchased from the Houston Light & Power Co. Motors were furnished by the General Electric Co., and are arranged to drive the machinery in small groups through shafting overhead, or are applied direct to the machines. The former type of drive is used in the opener rooms and card rooms. All the remaining equipment is individual motor drive.

Artificial illumination is obtained from 300-watt lamps in RLM reflectors, spaced on approximately 16 ft. centers and mounted 14 ft. above the floor. The units are arranged for a general illumination system, yet they are placed in reference to the arrangement of the machinery. Wiring to lighting units is arranged to control lights in groups through operation of fused safety type switches. Grouping of units is in accordance with the manufacturing processes.

New Equipment

Steam for heating and manufacturing purposes is obtained from a boiler plant containing a 150 h. p. oil-fired boiler. Steam for heating is delivered to the mill at 100 lbs. pressure, where it is reduced to 15 lbs. pressure for distribution to the heater coils. The pressure is 15 lb. for slashing and dyeing.

The fire protection system was furnished and installed by Rockwood Sprinkler Co. It consists of the standard arrangement of sprinkler heads, namely, a line of heads in the center of each 10 ft. 8 in. bay, lengthwise, and approximately 10 ft. apart across the mill. Constant water pressure is maintained by water in a 100,000 gal. tank. Supplementing this is a 1,000 gal. per minute centrifugal pump, direct connected to a motor. Parks-Cramer Co. furnished and installed the air conditioning system, which consists of high duty heads each driven by a small motor. Moisture control is automatic.

New textile manufacturing equipment in connection with this enlargement includes the following: One 08-spindle No. 60 Universal winder; eighty 82-in., 4 x 1 box, Crompton & Knowles looms; twenty 92-in., 4 x 1 box, Crompton & Knowles looms; four 36-roll Woonsocket nappers; and the following Whitin machinery: 2 pickers, 19 cards, 16 deliveries first drawing; 16 deliveries second drawing, 2 slubbers, 3 intermediate frames, 3 roving frames, 8 filling spinning frames, and 5 warp spinning frames.

Plans for the original mill, warehouse, office, new buildings, machinery, electrical and steam heating layouts, were made up by J. E. Sirrine & Co., engineers, Greenville, S. C. The building contractor is G. C. Street Construction Co.

New Tire Fabric Mill for Goodyear

Establish 30,000-Spindle Plant at Cedartown, Ga., Purchasing Mill No. 2 of the Cedartown Cotton and Export Co. as a Nucleus—Erect New Buildings, Including Main Mill Building and Storehouses—Central Station Humidifying—Mill Village Enlarged

*By S. B. Lincoln**

EARLY in the year 1926, the Goodyear Tire & Rubber Co., Akron, Ohio, started the investigation of possible southern locations for manufacturing tire fabric, with a view to building a plant in the South to house a portion of the cotton machinery acquired by them in their joint purchase with the Fisk Rubber Company of the plant of the Essex Cotton Mills at Passaic, N. J.

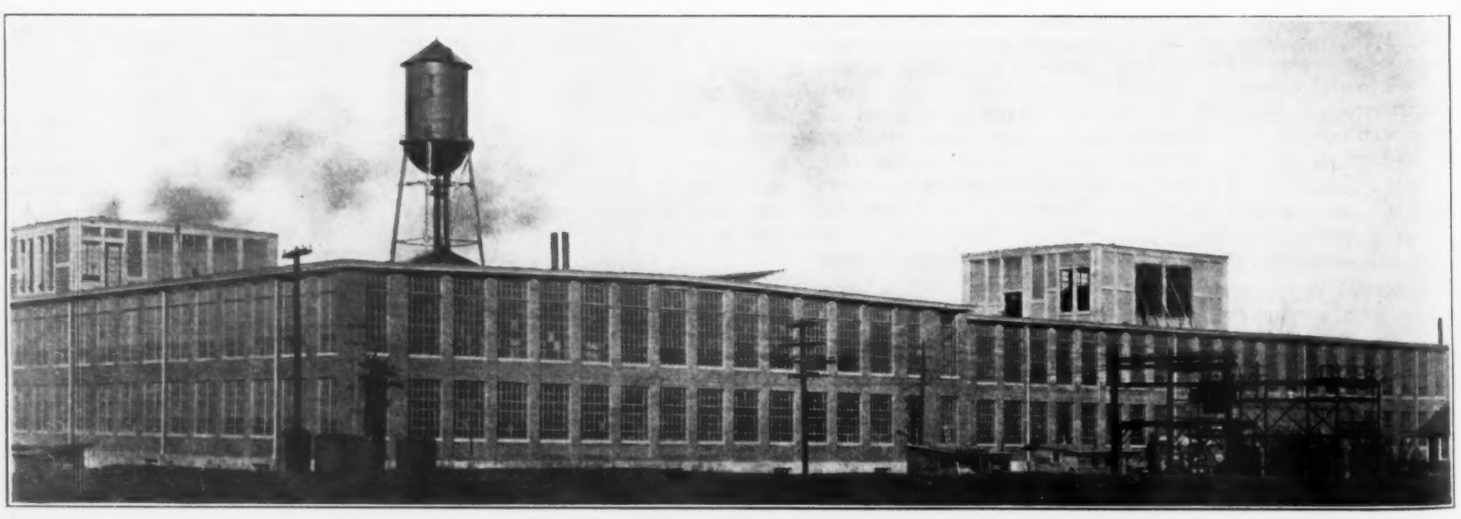
A number of locations were inspected and considered, the final result being the purchase of Mill No. 2 of the Cedartown Cotton & Export Co., at Cedartown, Ga. This purchase was arranged early in March and formal possession of the Cedartown property was taken during the week ending April 17. This mill as originally acquired had 12,000 ring spindles and approximately 5,000 mule spindles. It was planned from the beginning to throw out the mule spindles and to add carding, twisting, and weaving machinery from Passaic in sufficient quantities to bring the mill up to a total capacity of 30,000 spindles, balanced for the production of such tire fabrics as the Goodyear Company might wish to produce at this plant.

Lockwood, Greene & Co., Inc., Boston, were engaged as engineers to prepare layouts for all machinery, motors, wiring, transmission, etc., and to make the construction and equipment drawings for the mill. The engineering department of the Goodyear Tire & Rubber Co., at Akron, handled the securing of bids and placing of all contracts, and attended to the supervision of construction and installation on the ground. It was decided to name the plant the Goodyear Clearwater Mills, for reasons that are mentioned later in this article.

Layout of New Mill

The new building layout adopted provided for a new two-story, L-shaped mill, connecting directly with the existing mill and having a main mill building 143 ft. 6 in. wide by 507 ft. 6 in. long, and an ell 252 ft. 6 in. by 148 ft. 6 in. wide. Three new storehouse sections were built, approximately 50x120 ft. in size, two of these being one story in height, and the

* Lockwood, Greene & Co., Engineers, Boston, Mass.



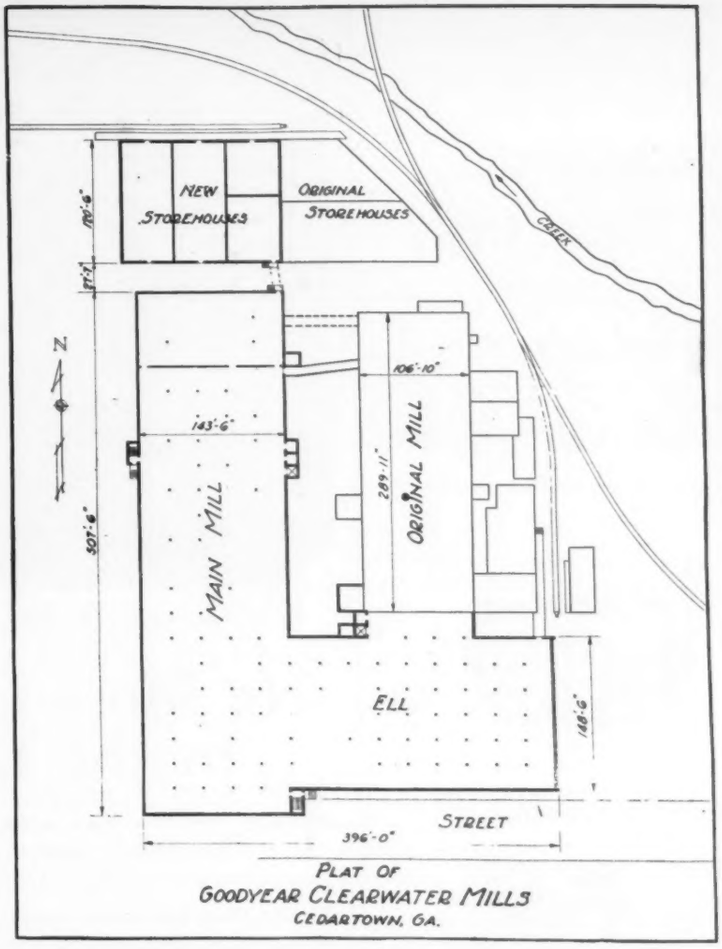
Goodyear Clearwater Mills; One End of Main Mill With Ell at Right; Both Fan Houses of Central Station Equipment Are Shown

other sections being two stories with a waste house in the second story.

The type of construction selected was self-supporting steel frame throughout, the steel columns in the outside walls being surrounded by narrow brick pilasters. All floor and roof beams throughout were of steel with heavy plank floors and roofs.

As the layout of the mill provided for having all of the spinning and twisting in the second story, it was decided to use a central station system of humidifying and air conditioning for the entire second floor. The engineers, following the method previously worked out by them for several recent southern mills, made layouts providing for the housing of all fans and air conditioning apparatus in fan houses above the main roof level. There are two of these large fan houses on the roof, each taking care of a portion of the second story, so that no floor space in the manufacturing rooms is taken up by conditioning apparatus.

The work of the engineers included a complete rearrangement of the machinery in the present mill in order that the finished layout might provide for the most economical manufacturing. Plans were completed early in June, 1926, at which time the taking of bids was commenced, and practically all contracts were placed during the next month or two, construction work on the ground being started in July. At this writing, the building is practically closed in from the weather, the moving of machinery from Passaic has started and its erection has been commenced in the new mill.



PLAT OF GOODYEAR CLEARWATER MILLS CEDARTOWN, GA.

The principal contractors on this work were as follows: Structural steel, Burger Iron Co., Akron, Ohio; general construction contract, Hunkin-Conkey Construction Co., Cleveland, Ohio; fire protection and heating, Grinnell Co., Charlotte, N. C.; elevators, Otis Elevator Co.; humidifying, including both central station system and head system, Parks-Cramer Co.; lighting and power wiring and electrical substation, Walker Electric Co., Atlanta, Ga.

Designs for mill houses were prepared by the engineering department of Goodyear Tire & Rubber Co., and the contract for construction of houses was let to the Daniel Lumber Co., LaGrange, Ga. Over 95 operatives' houses have now been completed. In addition to this, a number of modern houses were purchased.

It was decided to name the new mill the Goodyear Clearwater Mills by reason of the fact that this mill is located in the clear water section of the state, and because of the fact that there are a number of very fine springs on the property which furnish an adequate supply of pure water.

The operation of all Goodyear Tire & Rubber Co. fabric plants is under the direction of S. A. Steere, manager, cotton and fabric division, Akron, Ohio. Contracts were placed and supervision carried out under the direction of Charles C. Grant, manager, engineering and maintenance department, Akron, Ohio.

New Cannon Unit and Power Plant at Kannapolis

Completion of 50,000-Spindle Mill Brings Total Spindleage Up to 180,000—Power Plant Will Supply Heating and Process Steam to All Units and Will Generate a Portion of Power Requirements—New Warehouses and School Addition Included in Expansion Program

THE latest expansion program at the Cannon Mfg. Co., Kannapolis, N. C., completed in 1926, represented the addition of a unit containing a greater number of spindles than any other single unit of the plant. In addition, recent construction at Kannapolis has included the erection of a new power plant, the building of eight new warehouses, and the enlargement of the mill school facilities by more than double. Through this program, Kannapolis has further established its position as the largest towel manufacturing center of the world.

The new mill, to be known as mill No. 7, is equipped with 50,000 spindles and auxiliary machinery. It comprises a main building, three stories in height, 100 x 700 ft., with a basement running the full width and 140 ft. of the length; also an annex three stories in height; 80 x 230 ft. The two buildings are connected by a three-story bridge at one end and by a one-story bridge at the second floor at the other end.

The buildings are of all-steel frame construction, with wood intermediate floor beams. The ground floors of both the main building and the annex are on tar rock foundations, while the upper floors are heavy plank with maple finish. The daylight construction of the building affords particularly good lighting facilities, the windows being 20 ft. in width. Full length monitors are on both buildings, with steel top-hung sash used.

Continuous operation is insured, the opening and picking processes being located on the second floor of the annex, connected by passageway to the second floor of the main building which is devoted to carding. Above the carding is the spinning, which in turn is connected with the upper part of the annex where the spoolers are installed.

Carding and spinning equipment was supplied by the Whitin Machine Works, Whitinsville, Mass.; opening and drawing by the Saco-Lowell Shops, Lowell, Mass.; fly frames by the Woonsocket Machine & Press Co., Woonsocket, R. I., and spoolers and warpers by Barber-Colman Co., Rockford, Ill. The 50,000 additional spindles added to the Cannon Mfg. Co. brings their total spindleage up to 180,000.

Building to Increase School Facilities at Kannapolis

The design and construction of this new unit and of the power plant were under the direction of Thos. E. Murray, Inc., New York, designing and consulting engineers and architects. The structural steel contract was in the hands of the American Bridge Co. The Brown-Harry Co., Gastonia, N. C., had the contracts for the foundation and superstructure. Allis-Chalmers motors and Trumbull electric control are used in the new mill.

New Power Plant

The new steam and power plant erected at Kannapolis will supply heating and process steam to the entire plant of the Cannon Mfg. Co. and will also be used to generate a

VENTILATION VAPOR REMOVAL AND HEATING

Wing-Scruplex Fans and Exhausters

Scruplex Fan

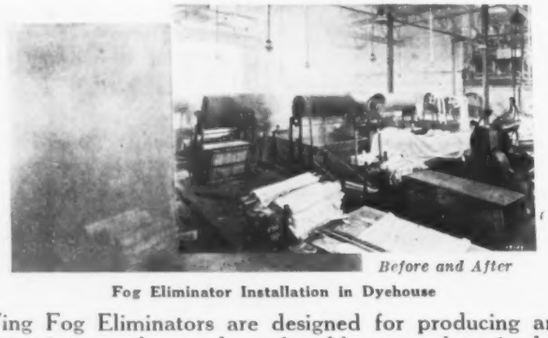
For all kinds of ventilation requirements. Wing-Scruplex Dyehouse Fans are used for handling moisture-ladened air and corrosive vapors, etc. Fans available in sizes from 10" to 60", with direct-connected motor drive; 10" to 108" diameter with pulley belt drive. Fan manufacturers for over 40 years.

The Wing-Scruplex Exhauster handles air, fumes, corrosive vapors, etc., without subjecting the motor to their deteriorating effects. The motor is entirely removed from the exhauster casing. It is easily installed with any duct system. Made in horizontal and vertical types, with intake top, bottom, or either side.

MOTOR ENTIRELY OUTSIDE OF CURRENT OF VAPOR OR AIR HANDLED BY THE FAN—KEEPS CLEAN AND COOL
BEARING IS LOCATED CONSTANTLY WITH FILTER CLEAN AIR—AIR HANDLED DOES NOT COME IN CONTACT WITH BEARING
AIR OUTLET
AIR INLET

Wing-Scruplex Exhauster

Wing-Scruplex Fog Eliminators

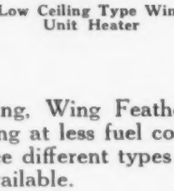


Fog Eliminator Installation in Dyehouse

Wing Fog Eliminators are designed for producing and maintaining a clear and comfortable atmosphere in dyehouses, without the use of any duct work, or other cumbersome auxiliary equipment.

Wing Featherweight Unit Heaters

Wing Unit Heater in Textile Mill



Low Ceiling Type Wing Unit Heater

For heating any kind of Mill building, Wing Featherweight Unit Heaters give better heating at less fuel cost; besides conserving floor space. Three different types of overhead units in various sizes are available.

Bulletins and Catalogues on Request

L.J.Wing Mfg.Co.

358 West 13th St., New York City

Installation of Swartwout Ventilators at the Passaic Piece Dye Works, Passaic, N. J.

No More Condensation in the Dye House

THE success of Swartwout Ventilating Engineers in eliminating the evils of condensation and excessive humidity in dye houses is one of the important recent developments in the industry.

The problem has been a serious one, as it involved rapid deterioration of buildings as well as discomfort and annoyance to workers.

Swartwout Ventilation takes out the winter's fog and the summer's swelter. Results are positively guaranteed. Swartwout Rotary Ball Bearing Ventilators deliver more air per dollar invested than any other. Their initial cost is low and their operating cost nothing. They are non-mechanical, no fans to drive, no motors to keep up.

We will be glad to study your ventilating problem and make recommendations. Remember, we assume the entire responsibility ***and guarantee results.***

Please write or send the coupon.

THE SWARTWOUT COMPANY

Executive Offices: **18511 Euclid Avenue, Cleveland**

Factories at: **Cleveland and Orville, Ohio**

Swartwout
ROTARY BALL BEARING VENTILATORS

THE SWARTWOUT COMPANY,
18511 Euclid Avenue, Cleveland, Ohio.

We are interested in ventilation for.....

.....

Send copy of your book "The Gospel of Fresh Air."

Firm.....

Individual.....

Address.....

New 50,000 Spindle Cotton Mill Unit of Cannon Manufacturing Co. at Kannapolis, N. C.

portion of the power requirements of the plant. The power plant is located within an area equally accessible to all mills. A railroad siding and trestle are adjacent to the building, so that coal cars may be unloaded with the coal tower. The installation includes a General Electric Co. turbine of 2,500 k. w. capacity, of which 94% of the total steam supplied to it may be bled at an intermediate stage. This steam is used for process purposes at the various mills. In this way the turbine is used as a reducing valve for high-pressure steam, and the power generated costs practically nothing.

A 2,650 square foot condenser is included with the turbine for operating the turbine condensing at such times when the process steam required is at a minimum. At all other times the condenser condenses only enough steam for full load on the turbine.

A concrete stack 200 feet high by 12 feet in diameter has been erected with the new plant. The coal tower has a capacity of unloading 45 tons of coal per hour. Three 620 h. p. Walsh & Weidner boilers which operate at 275 lbs. pressure, with no superheat, produce all the steam required for the plant. Only two of these boilers are necessary for operation at one time, the other being used as a spare. Provision has been made for the installation of superheaters at a future date if such service is required. Murray water walls have been installed in each boiler setting equivalent to 230 square feet of surface, which will keep the maintenance cost of the boiler settings at a minimum. Stokers of the latest design will fire the boilers to 300% of rating. The ashes will be taken away by a steam jet ash conveyor system, which transports same to a tile overhead tank outside of building. From this point they may be loaded on trucks. Steam-driven boiler feed pumps and forced draft fans have been provided.

Water for condensing purposes is obtained from a lake nearby through centrifugally cast iron pipe and then sent to a well near the plant, from which point it is re-circulated to the lake. The latest improvements have been incorporated in this layout, the piping being so arranged that steam is sent to various mills at 50 lbs. from the turbine direct, or may be reduced from the high pressure steam main.

Steam flow meters register the flow to all mills. The majority of the condensate is returned to the power plant and to an open feed water heater, where the necessary make-up water is added with the exhaust steam from the auxiliaries. Feed water regulators maintain a constant level of water in the boilers. The piping is well insulated with that portion which is underground covered by tile.

No details have been omitted to make this an efficient, up-to-date industrial power plant.

Connecticut Mills' Alabama Plant

Erecting 32,000-Spindle Unit at Albany-Decatur—Provision for Future Expansion

THE Connecticut Mills Co. is establishing a southern plant at Albany-Decatur, Ala. This first Alabama unit will have about 32,000 spindles, and other necessary equipment for making fabrics for the tire trade. The plans provide for expansion in the future. The machinery for this first unit will be moved from the plants now operated by the company in Fall River, Mass. and Danielson, Conn. The machinery involved in this move is about one-half of the equipment of the company.

The new plant is located on a tract of land on the edge of Albany, Ala., where the usual facilities of a city are available to it, and it will not be necessary to build a mill village. The buildings to be erected in this group consist of a three-story mill, 460x140 ft., with separate picker building, 72x70 ft., of slow burning mill construction, with steel beams and plank floors. Storehouses are being built on a railroad siding on the property with ample capacity for both raw cotton and finished goods. There is also an office building, boiler house, and waste house. This group as planned contains over one-quarter of a million square feet of floor space.

The mill yard will be equipped with a complete system of fire protection piping and hydrants, with fire pump and reserve supply of water. The mill will be operated by purchased power. The property will be laid out with the necessary roads, walkways, and lawn.

Work Now Under Way

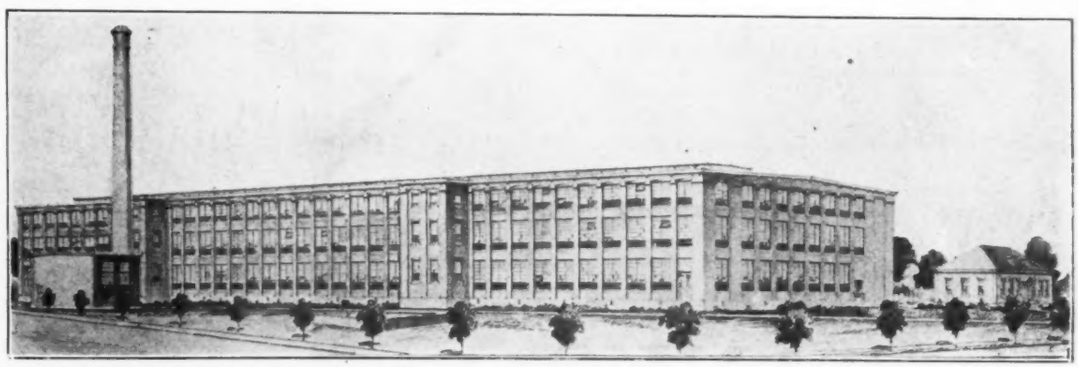
Contract for the construction of the plant and yard equipment has been let to A. K. Adams & Co., of Atlanta, Ga., and the work is now under way. The steel beams for floors and roof were purchased in advance of placing the main contract, and the Decatur Iron & Steel Co., Albany-Decatur, Ala., will shortly start the delivery of these. Bids for lighting, heating, sprinklers, and other parts of the building equipment will be obtained as soon as the plans are ready.

The Textile Realty Co., of Albany-Decatur, Ala., is providing the money for the construction of the new plant, including the land and building equipment. They have arranged with Caldwell & Co., bankers, of Nashville, Tenn., for the sale of an issue of bonds against the property which they are providing and leasing to the Connecticut Mills Co., the latter agreeing to purchase the property at the expiration of the lease.

The Textile Realty Co. was instrumental in securing this plant for Decatur. In this work many interests, both local and statewide, were represented. Among those especially active for the Textile Realty Co., were Thos. A. Bowles, president, W. W. Fussell, and John Knight.

Obadiah Butler, president, and H. L. Burrage, vice president, of the Connecticut Mills Co., were recently in Decatur conferring with the officials of The Textile Realty Co., and advised in regard to the placing of the construction contract. They expect speedy completion of the mill, so that the movement of machinery can commence at an early date.

Chas. T. Main, Inc., engineers, of Boston, Mass., are in charge of the design and supervision of construction of the plant. Arrangements have been made with Brander & Curry, Inc., of New York, to sell the product of the mill.



Plant Under Construction at Albany-Decatur, Ala., for Connecticut Mills Co.

Among the many Horton Tank installations at textile mills is this 75,000-gallon ellipsoidal-bottom tank which protects the property of the Stillwater Worsted Mills, Ashaway, Rhode Island.

Elevated *water is the only certain fire protection*

WHEN a fire breaks out you want water—plenty of it and available instantly at the exact spot where it is needed. Water in a city main or in ground storage is of no value unless it can be lifted up into the building when the fire starts. Failure of pumps or low pressure in the public supply mains may make this impossible just at the minute you need it.

But when you have an **elevated** storage the work of lifting the water has already been done. A tank full of water above your buildings connected to a proper distribution system provides a positive and instant supply of water at any point where a fire may break out. The only force needed to carry the water from the tank to the fire is gravity and gravity never fails.

A Horton Tank offers economical and dependable elevated storage. It never rots nor burns; its last cost is always low. The same tank can be piped to furnish water for washing or other processes if desired. Standard sizes meet practically all requirements. Prompt delivery possible.

Get an estimate on a Horton Tank to safeguard your property.

CHICAGO BRIDGE & IRON WORKS

Chicago, 2112 Old Colony Bldg.
New York, 3125 Hudson Ter. Bldg.
Cleveland, 2203 Union Trust Bldg.
Dallas, 1628 Praetorian Bldg.
Atlanta, 1075 Healey Bldg.
San Francisco; 1080 Rialto Bldg.
Havana, Cuba, Apartado 2307

See also CONSOLIDATED TEXTILE CATALOG

HORTON TANKS

TW2-Gray

INVESTIGATE

the Economic Possibilities of Burning

FAMOUS READING ANTHRACITE

The burning of the small sizes of anthracite produces heat, power and steam in abundance —but no smoke. High heat-producing energy is obtainable with anthracite without loss in the various processing departments by smoke.

Equipment for burning barley, buckwheat and rice for generating steam and providing heat, is now available.

BUCKWHEAT

RICE **BARLEY**

The Philadelphia and Reading Coal and Iron Company

General Office

Reading Terminal **Philadelphia**

Tire Cord Plant and Bleachery at Thomaston

Two Important Developments Carried Out by Hightower Interests—Erect Bleachery With Weekly Capacity of One Million Yards, and First Section of Tire Cord Manufacturing Plant Which Will Ultimately Have 60,000 Spindles—Village Extensions—New Office Building

ONE of the new projects completed and placed in operation the first of the year is the tire cord manufacturing plant of the Thomaston Cotton Mills, at Thomaston, Ga., which has been given the name of "Martha Mills." This is the second large development completed at Thomaston within the last twelve months, the first being the Thomaston Bleachery, a unit in the development of the Hightower group of mills, which comprises a total of 135,000 spindles.

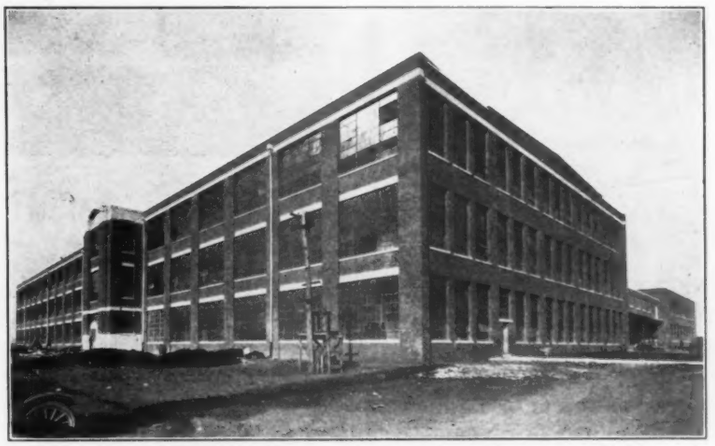
Thomaston Bleachery

The bleachery is a modern plant in every respect, with a production capacity of a million yards of goods per week, machinery for one-half of this production only being in operation at the present time. Water for the operation of the bleachery as well as for all the mills is delivered from a source of supply two miles from Thomaston, the pumping station, storage reservoirs, tanks and filter plants being owned and operated by the mills. The capacity of the reservoir at the bleachery site is three million gallons.

Amber-Colored Glass

The main mill proper of Martha Mills is 134 ft. wide by 432 ft. long, and three stories high. The construction of the building consists of brick and steel sash outside walls, cast-iron columns, steel floor and roof beams, heavy plank floors and roof. The steel sash, with the exception of the lower lines of lights, are glazed with a special amber-colored glass to diffuse the natural light rays, eliminating direct rays of the sun and consequent glare. A future extension program contemplates an ultimate development of 60,000 spindles, and a three-story building 134 ft. wide and 900 ft. long.

The cotton opening compartment and the picker department are in a detached two-story building. This building is 102 ft. wide and 277 ft. long, with plans for future extensions, contemplating a finished building 355 ft. long. The picker room is connected to the carding department on the second floor of the mill by means of an enclosed overhead trucking passageway. In addition to the opener and picker rooms, this building contains eight compartments, 50 by 100 ft., which serve for cotton assorting and storage, waste assorting and storage, and the machine shop.



Martha Mills, the New Tire Cord Manufacturing Plant of Thomaston Cotton Mills

The mill is electrically operated but there is a detached steam plant 36 by 43 ft. for furnishing steam to the heating system. The mill is served by two elevators, and the detached building by one, all electrically operated.

Two Villages

In addition to the structures described above, the development includes two villages, the North Village and the South Village, which serve to house the operatives and employes of the mill. The North Village consists of 108 cottages, comprising 400 rooms, and the South Village consists of 116 cottages comprising 500 rooms, making a total of 900 rooms. There are 224 garages, one for each house, each garage building housing a battery of four garages.

All streets and sidewalks are graded. No paving of streets and sidewalks, or laying of curb and gutter have been done, this program being postponed to allow for thorough settlement of all areas which are to be paved. All sidewalks, however, have been surfaced with gravel. An extensive program of landscaping and planting is contemplated.

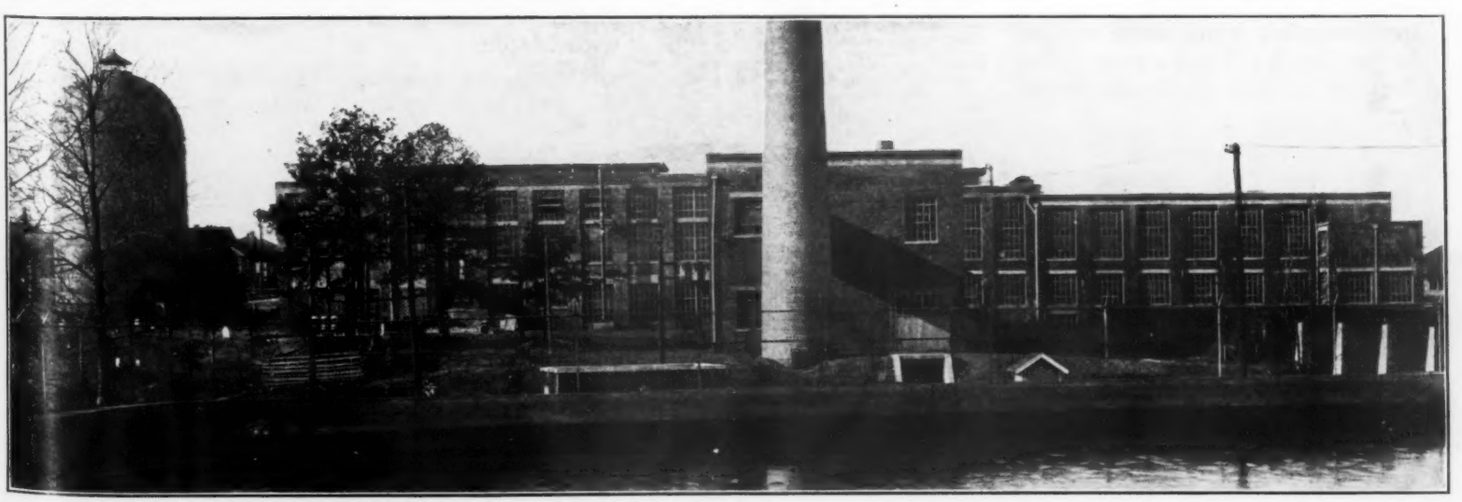
Each village is supplied with a complete water and sewerage system. Houses are equipped with up-to-date plumbing system, including sinks, lavatories, toilets, and bath tubs. Each village is also equipped with a complete lighting system for street and house lighting, all fixtures in the houses being controlled by push-button switches.

The houses are frame construction of varying designs; all floors are double floors, and all walls are plastered. The roofing material is asphalt composition, slate surfaced, fire-resisting shingles of variegated designs and selected shades. Each house has both a front and rear porch.

Office Building

The office building is now under construction and is in front of the mill at a point which will bring it in the center of the mill in its final development. It is built of brick and hollow tile exterior walls, using a rough texture tapestry face brick, frame partition walls, plastered, double floors, and tile roof.

Robert & Co., Inc., architects and engineers, of Atlanta, were engaged by the owners to handle the construction and engineering problems, and Batson-Cook Co., of West Point, Ga., were the general contractors on the mill buildings. The villages were built by the owners. The elevators were furnished and installed by the Parks Manufacturing Co., of Charlotte, N. C.; heating and fire protection by Crawford & Slaten, of Atlanta; automatic heat control by the Johnson Service Co., of Atlanta. Tank, tower, and boilers were supplied by the R. D. Cole Manufacturing Co., of Newnan, Ga.; motors by Allis-Chalmers Co., and the substation equipment by the General Electric Co. Wiring in both mill and villages was done by J. M. Clayton Co. Rust Engineering Co. built the radial brick stack, and the water and sewer work in the village was handled by the Dysard Construction Co., of Atlanta.



End Elevation of New Thomaston Bleachery, Thomaston, Ga.

Would Ben Franklin point his finger at YOU*?*

You can be sure he would if he were making a tour of your mill and, glancing at the ceiling found it a trackless waste. You could expect him to remind you of his famous epigram: "Economy itself is a great source of revenue."

That ceiling can be made the right of way for a Louden Monorail System of overhead lifting and carrying which will speed up the handling of your goods in every stage of their manufacture from dyeing to shipping room.

It will reduce handling charges, relieve congestion on the floor, eliminate the exhausting labor of lifting and trucking. That one rail on the ceiling is worth twenty men on the floor.

It binds departments together in a unit and co-ordinates their work. It is adaptable for any mill, large or small. Its trouble-proof service is the result of years of patient development and the test of actual service in thousands of plants, many of them with material handling problems just like yours. It will prove successful for you. It will make your ceiling the right of way to greater dividends.

Get This Book on Material Handling

Just off the press. It tells a remarkable story about the conveying of materials in process of manufacture, handling finished products, etc. 56 pages of dimensioned drawings, 72 pages illustrating application of Louden Monorail to many types of work, including yours. Complete information on track, trolleys, switches, cranes, monorail scales, dipping machines, hoists, etc. Data shows how to cut production costs. Write for your copy of this valuable book. No cost or obligation of course.

The LOUDEN MACHINERY COMPANY
1300 West Ave (*Established 1867*) Fairfield, Iowa
Albany Boston Buffalo Cleveland Cincinnati St. Louis Detroit New York
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LOUDEN INDUSTRIAL MONORAIL SYSTEMS

(for Overhead Lifting and Carrying)

The LOUDEN MACHINERY COMPANY
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Name of Company _____

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Smiles of Contentment!

Fortunate the mill owner whose workers can "show the smile!" The smile of health—of happiness in their work and contentment with the conditions under which they do it.

Such smiles pay large dividends to the man who has made them possible. Dividends in his own great inward satisfaction. Dividends, too, in bigger output and better finished products. *The happy worker is a good worker.*

Let Maple floors add to the happiness, comfort and efficiency of your workers. Maple—the floor that is bright and cheerful. Maple—the floor that is warm, dry and clean. Resilient Maple—the floor that never induces tired feet or aching muscles.

Nature has put other remarkable qualities into this healthful, comfortable flooring material. Maple is extremely tough-fibred and tight-grained. It will not splinter, sliver or develop ridges. Heavy rolling trucks and scuffing feet simply make it smoother and smoother with time. It actually outwears stone!

You can lay a Maple floor right over your present floor. For all 'round satisfaction in your plant, for lasting service and economy—floor with Maple.

Let our Service and Research Department assist you with your flooring problems. Send us your questions or write for any of the following free booklets you wish.

☐ Roller Skates and Service Floors
☐ Three Native Hardwoods of Sterling Worth
☐ How to Lay and Finish Maple, Beech and Birch Floors

MAPLE FLOORING MANUFACTURERS ASSN.
1060 Stock Exchange Building, *Chicago*

Guaranteed Floorings

The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use.

MFMA

Floor *with* Maple
Beech *or* Birch

New Sayles Finishing Plant at Biltmore, N. C.

Completion of Sayles-Biltmore Bleacheries Represent Addition of Fifth Property to Sayles Finishing Plants, Inc.—Has Capacity of 1,000,000 Yards Per Week—Includes Particularly Attractive Mill Village—Company Has Grown Steadily Since Origin in 1847

THE completion in 1927 of the plant of the Sayles-Biltmore Bleacheries at Biltmore, N. C., marks the latest step in the development of the Sayles Finishing Plants, Inc., with headquarters at Saylesville, R. I. Organized in 1847, this company has grown steadily until it now owns five properties.

The Biltmore plant, the latest addition to the Sayles organization, is a completely new one and is equipped for a capacity of 1,000,000 yards per week. It comprises three separate buildings, the main building, the auxiliary building and the power plant.

The main building is 150 ft. wide by 632 ft. long, part being one story, part two stories and part three stories in height. This building houses all the manufacturing operations, beginning with the gray room and ending with the packing room.

The auxiliary building is 100 ft. by 225 ft., four stories in height. It includes gray goods storage, finished goods storage, manufacturing stores, box shop, machine shop, etc. It is connected with the main building by a four story bridge.

The present equipment of the power plant includes two 477 h.p. water-tube boilers and a 750 kva. turbine driven generator.

Transportation Facilities

The plant is located on a site of approximately 200 acres, situated in a bend of the Swannanoa River, at a point about two miles from the center of Asheville. The Southern Railway runs along the southern boundary of the plant and from it a spur track runs on a uniform down grade for a distance of approximately three-fifths of a mile through the property to the plant. The track, when it reaches the site of the plant, is carried on a concrete trestle so that cars are unloaded into the top floor of the auxiliary building. Coal is unloaded from the same trestle into a track hopper from which it is carried by a coal conveyor to an overhead bunker in the boiler house.

An excellent water supply is available from the Swannanoa River, the filter plant and storage reservoir being located south of the plant.

Section of Village Development of Sayles-Biltmore Bleacheries

The Plant Village

The site of the Sayles-Biltmore Bleacheries is not only excellently adapted, through transportation facilities and water supply, for the bleaching and finishing operations carried on by the company, but is also a particularly attractive one for the location of the village. The site consists of flat bottom land, from the southern edge of which the hills rise steeply. The lower floor of the plant has an elevation of 2,015 ft. above sea level, and the houses in the village, which is located on the hill south of the plant, reach an elevation of approximately 150 ft. higher. In order to get from the valley in which the plant is located into the hills south of it, where the village is situated, it has been necessary to build through the woods curving roads along which the 75 houses are located.

These houses are all the bungalow type, some having three rooms, some four rooms and some five rooms. All have bath rooms, inside toilets and sewerage system. Water is supplied to them from the Asheville city water main.

Care has been taken to preserve the natural beauty of the site, and none of the beautiful trees throughout the village has been cut down in the construction of roads and houses.

Furnishers of Equipment

Although a branch of the Sayles Finishing Plant, the Sayles-Biltmore Bleacheries represent a complete unit in itself and will have its own machine shop, and its own box shop in which are manufactured wooden boxes for shipping its finished products. The plant bleaches and finishes cloths that are manufactured by southern mills, particularly wide and narrow sheetings and shirtings. Its operations also include the manufacture of sheets and pillow cases.

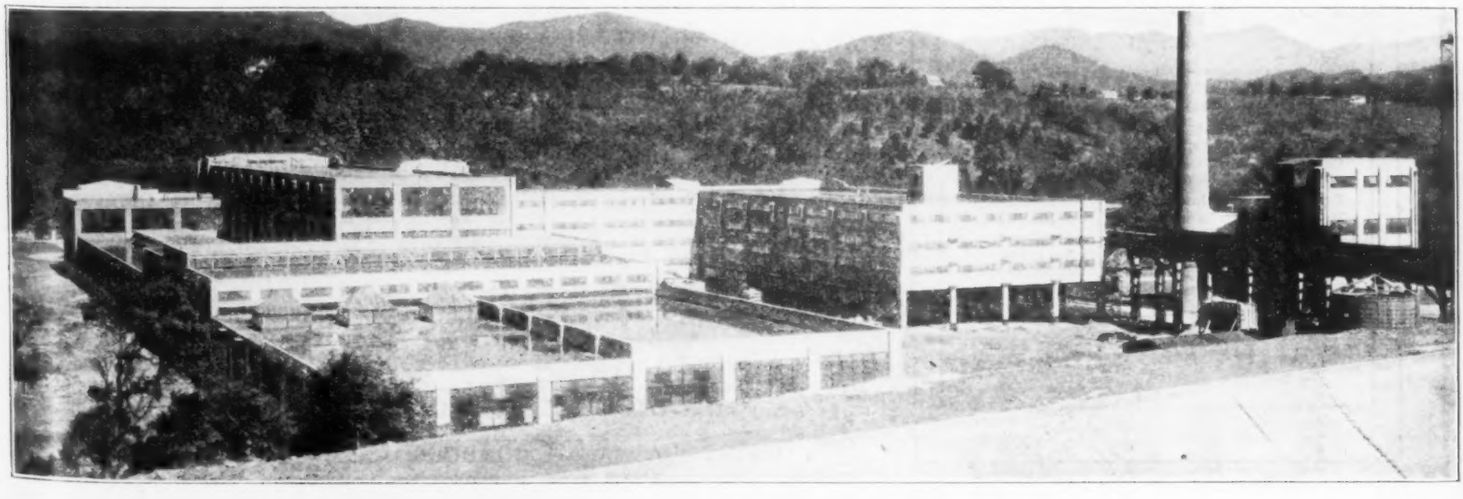
J. E. Sirrine & Co., Greenville, S. C., were the engineers in charge of the project while the Fiske-Carter Construction Co., also of Greenville, was the general contractor.

The following firms held contracts: Raymond Concrete Pile Co., New York, foundations; H. A. Wells Construction Co., Asheville, N. C., streets, roads, ditches, etc.; W. M. Welch, Inc., Greenville, S. C., 75 houses for operatives; Edens & Moon, Greenville, S. C., plumbing for cottages; General Electric Co., Schenectady, N. Y., turbo-generator; Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., switchboard; C. H. Wheeler Mfg. Co., Philadelphia, condenser; Babcock & Wilcox Co., New York, boilers; Riley-Sanford Stoker Co., Worcester, Mass., stokers; Diamond Power Specialty Co., Detroit, Mich., soot blowers; Alphons Custodis Chimney Construction Co., New York, chimney.

Background of Company

As stated previously, the history of the parent company dates back to 1847 when William F. Sayles established the original Sayles Bleachery at Saylesville, R. I. In 1848 this plant bleached about one ton of cloth per day. By 1854 the output had increased to four tons per day and there were between 12 and 15 people employed. It grew steadily until in 1860 it employed 40 people and processed 500,000 yds. per week.

Expansion reached a more definite stage in 1876 when the Glenlyon Dye Works at Saylesville was established. In 1900 the Glenlyon Print Works at Phillipsdale, R. I., was completed and in this year the output of the three plants amounted to about 1,800,000 yds. per week. In 1882, the first yarn



Sayles-Biltmore Bleacheries, Biltmore, N. C.; Latest Addition to Sayles Finishing Plants, Inc.

Why Building Costs are Low

CLAYS suitable for building materials, sand and gravel, cement, lime and lumber are local to this territory. Almost every town and hamlet has its lumber plant, and brick and tile plants are plentiful. One of the South's greatest cement plants is located at Perry, in our territory. Lime is produced in nearby kilns. The weather does not interfere with building operations at any season. Every community has ample unorganized building trades labor. Factories are built quickly and at remarkably low cost.

Contentment for Industrial Labor

"IT is now possible to supply electric power at a low cost to industrial plants in rural territory where comfortable homes with gardens and playgrounds may be provided for industrial workers, and their costs of living may be reduced * * *. It is believed that such decentralization of industry, as it is called, which electric transmission systems have made practicable, offers most promising opportunities for improved social and industrial conditions — such opportunities, in fact, as are not offered through any other known agency."—Extract from address of L. R. NASH before Rotary Club of Great Barrington, Mass.

Glimpse Georgia's Treasure Store

"IN GEORGIA these kaolins occur in almost continuous deposit extending from Augusta on one side of the state to Columbus on the other, over a width of from 10 to 20 miles. Over large areas the deposits are 40 feet thick. **The reserves are so great as to make almost ridiculous figures** * * *. New cement plants have been going up in all parts of the South * * *. Georgia and Alabama have larger reserves of low grade (bauxite) ore, running from 50 to 60 per cent. of aluminum oxide * * *. Georgia contains reserves (of fuller's earth) so large that no attempts have been made to estimate them."—Extracts from article in Manufacturers Record by Prof. A. F. Greaves-Walker.

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Columbus	West Point	LaGrange
Hogansville	Newnan	Grantville
Trimble	Moreland	Raymond
Albany	Americus	Baconton
Butler	Cobb	Cochran
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DeSoto	Flintside	Leesburg
Lenox	Leslie	Marshallville
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Pelham	Perry	Pinehurst
Poulan	Putney	Reynolds
Shellman	Smithville	Sumner
Sylvester	Tifton	TyTy
Unadilla	Vienna	

SOUTHWEST GEORGIA

A New Industrial
SOUTHWEST

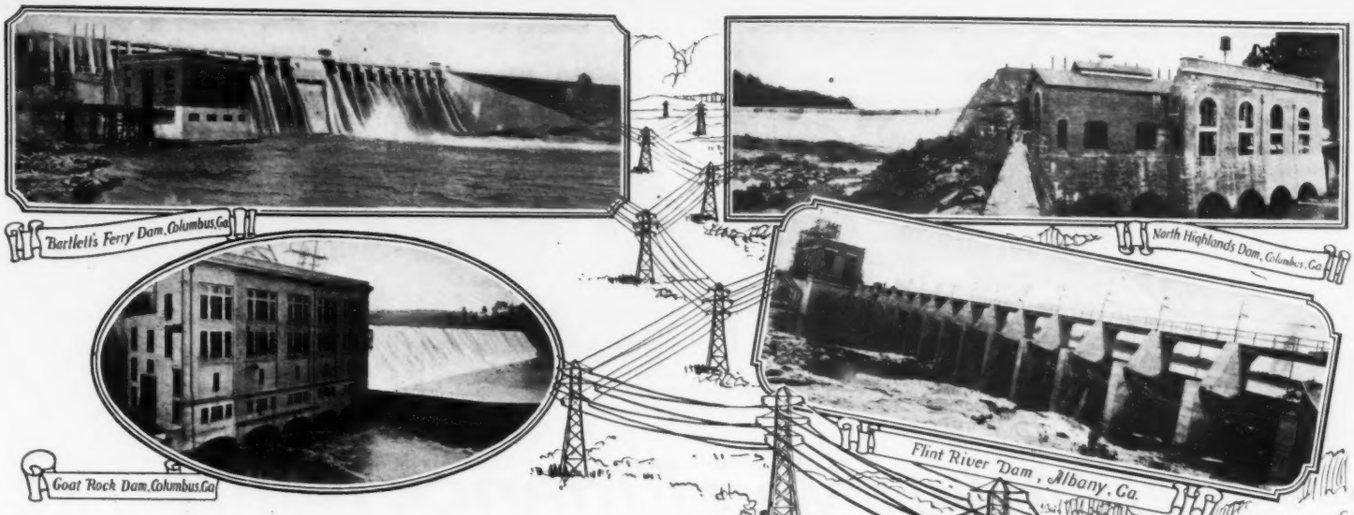
12,000 Square Miles Supplied with Columbus Electric & Power Company and

HERE is a setting for industry which possesses all those advantages responsible for the tremendous development now going on in Georgia, and some others that are peculiarly local to SOUTHWEST GEORGIA. Enormous resources in woods, clays, minerals and products of the soil are waiting to reward initiative and capital.

Characteristics of this territory are native-born population of Anglo-Saxon strain, freedom from labor troubles, low building costs, varied economies of operation, friendly public sentiment, tax exemption, mild and healthful climate in winter and summer, plenty of pure water, abundant local food production, low living costs, good schools, churches and amusements—and, finally, natural Southern cordiality and loyalty which makes contact with the people very pleasant.

A letter to us outlining your ideas for an enterprise, or your requirements for a new location, will bring proposals from points best suited to your needs. Inquiries treated with strictest confidence.

Columbus Electric & Power Company
Columbus, Georgia



Empire
GEORGIA

Dependable Hydro Power by South Georgia Power Company

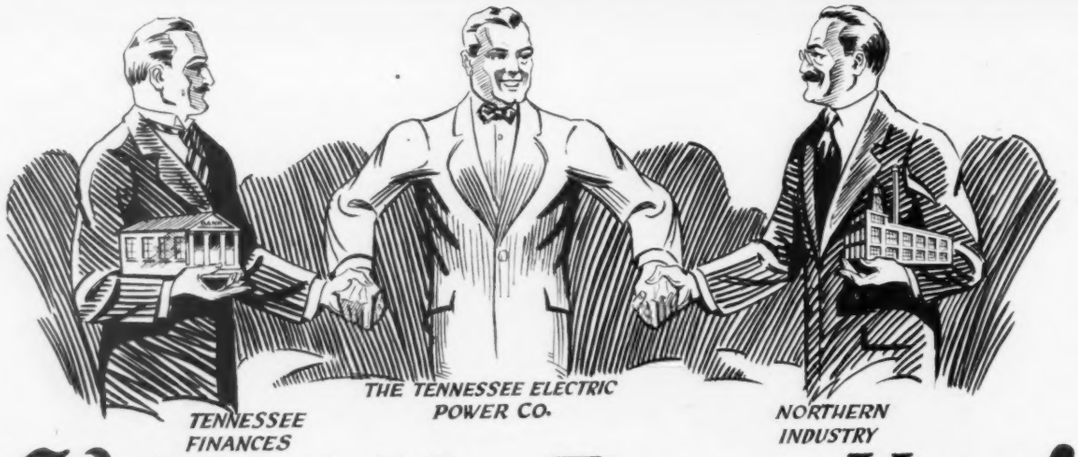
A New Area

TEN THOUSAND square miles of the most productive section of the entire South has just been opened to industry by the hydro-electric power lines of the South Georgia Power Company, which is a subsidiary of the Columbus Electric & Power Company. This power service is adequate and attractive for the largest industry, and is also particularly favorable to the small enterprise. This new area embraces many of the best small cities and towns of Georgia whose people are ready to co-operate in the establishment of new enterprises favored by local resources. It is well served by railroads and is within one night of deep water ports. We have complete surveys of this territory which are yours for the asking.

DEPENDABLE SERVICE is assured by seven hydro-electric developments on the Chattahoochee and Flint rivers having a combined capacity of 145,195 horse power, with a total steam auxiliary capacity of 17,125 h. p.

South Georgia Power Company
Albany, Georgia

Executive Management
STONE & WEBSTER, Inc.



We'll Help You Finance Your Move to Tennessee!

There's no disputing the fact that textile mills can operate to better advantage in the South than elsewhere. Lower costs of living coupled with cheaper prices for labor, adequate transportation facilities, abundant power resources and ideal year 'round climate all combine to make mill operations more successful and better able to meet the forces of competition.

The problem of financing a move South, however, is the vital question that confronts many executives otherwise sold on this territory. Here in Tennessee this obstacle has been largely removed through the splendid cooperation and assistance of local bankers and citizens of enterprising communities.

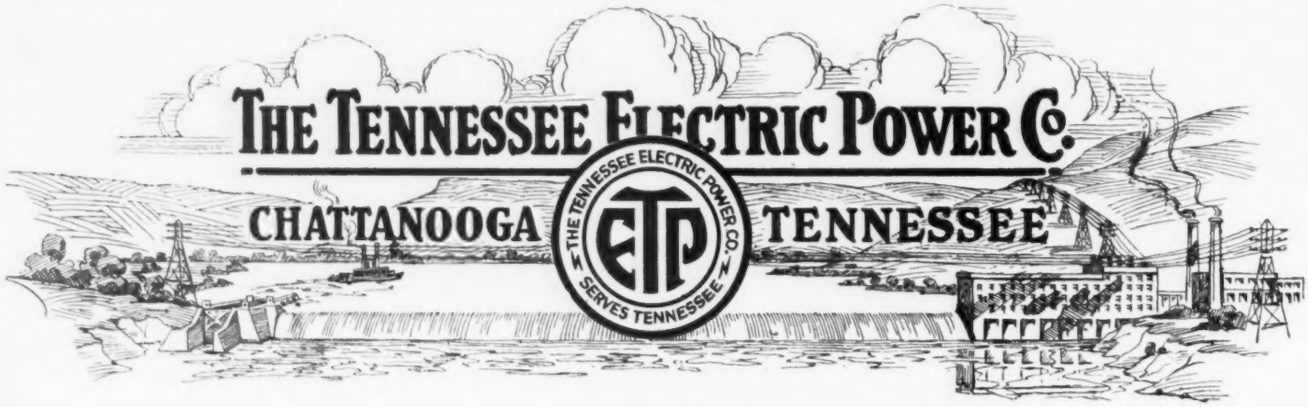
Tennessee wants new industries, her surplus labor is eager for employment and her citizens are ready and willing to assist reputable business establishments in solving their financial problems. Free factory sites or land at attractive prices, exemption from taxes, the erection of buildings, subscriptions to stock, etc., are some of the ways in which this cooperation is extended. Assistance or inducements offered are made to conform as far as possible with the requirements of the parties interested.

In the face of such cooperation there is really no reason, therefore, why any reliable industry should hesitate to take advantage of the more favorable conditions for operation that exist in Tennessee.

It is the function of the Industrial Department of The Tennessee Electric Power Company to make a preliminary analysis of existing conditions in various communities with reference to your particular requirements so that you may know exactly upon what basis you can effect a move into this territory. Such data and information entail no obligation on your part. Correspondence with interested executives is solicited.

He'll Call at~ Your Convenience

The Industrial Department of The Tennessee Electric Power Company is in charge of R. C. Leonard, a native Tennessean, who from practical experience is familiar with the problems of the various classes of manufacturing enterprises now operating in the state. Much of Mr. Leonard's time is spent in northern or eastern centers on which occasions he is available for personal consultation with executives interested. Requests for specific information about Tennessee's resources, possibilities and industrial advantages or other data should be addressed to the Industrial Department of The Tennessee Electric Power Company at Chattanooga.



BUILD YOUR MILL IN TENNESSEE

was dyed at the Glenlyon Dye Works at Saylesville and in 1911 the Glenlyon Dye Works at Central Falls, R. I., were established for the purpose of bleaching and dyeing yarn. In 1920 the plant was moved to Phillipsdale and this division of the company's operations has since been known as the Glenlyon Yarn Dye Works.

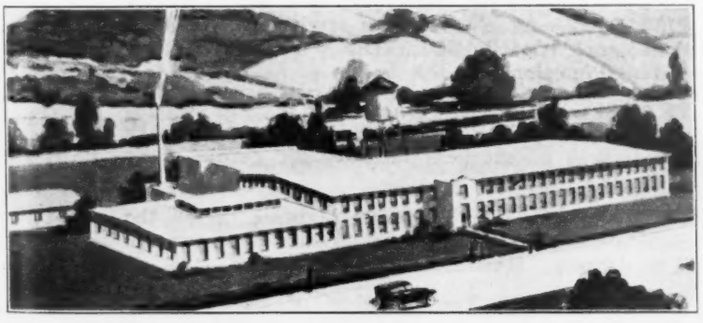
The four Sayles plants in Rhode Island have a total capacity of about 8,000,000 yds. per week and employ about 2,800 operatives. As stated, the Biltmore plant adds another 1,000,000 yds. a week to the capacity of the company.

Thomas Henry and Sons, Inc.

Locate New 20,000-Spindle Unit at Nashville, Tenn., for Manufacture of Yarns and Towels

AN interesting plant constructed during the last year is the new 20,000 spindle unit of Thomas Henry & Sons, Inc., located at Nashville, Tenn. This development is representative of eastern mills which are locating in the South. The company operated for a number of years in Philadelphia. Nashville, on account of its geographical location, and its surplus of women labor, was selected as the location for the first unit of this plant, and to date 20,000 spindles and 280 looms have been put into operation for the manufacture of cotton and merino yarns and turkish towels. This company manufactures the well-known "Woolmix" merino yarns.

The site purchased by the company contains 15 acres of land located on the Centennial Boulevard, in West Nashville, just outside of the city limits. The building program consists of a main mill building 312 ft. long, two stories, by 107 ft. wide; with a weave shed in tandem, 110 x 107 ft. A three-story picker room wing adjoins the main building on the rear, and adjacent to this wing is the boiler room and machine shop. A battery of warehouses is located parallel to and 50 ft. away from the mill. Railroad facilities are furnished by the L. & N. Railroad.



New Nashville Plant of Thomas Henry & Sons, Inc.

Construction and Layout

All of the buildings are of slow-burning mill type of construction, steel beams, steel sash, and brick walls being used throughout. Every other column was omitted throughout the mill, giving a bay spacing of 20 x 26 ft. This arrangement of column spacings enabled the owners to use the maximum amount of floor space in the mill, and at the same time obtain an economical layout of machinery.

The textile machinery has been so arranged as to provide for a continuity of process throughout. The cotton is blown from the opening room to the picker room on the second floor through an overhead conveyor. The card room and all of the roving machinery are located on the second floor, while the spinning department is located on the first floor. All of the jacquard looms, as well as the towel department, are located in the one-story weave shed. Special facilities and equipment have been provided to handle the raw wool which is used in the merino yarn.

The complete engineering work involved in putting this new development into operation was handled by Robert & Co., Inc., architects and engineers, Atlanta, Ga. The fire protection system was installed by the Rockwood Sprinkler Co., and the heating system was installed by John Bouchard & Sons Co., of Nashville. The elevators were furnished by the Warner Elevator Co., and all of the light and power wiring was handled by the Walker Electric Co., of Atlanta. A. K. Adams & Co., of Atlanta, were the general building contractors.

Full-Fashioned Knitting Building

Real Silk Hosiery Mills, Indianapolis, Ind., Make Further Expansion—An Interesting Layout

*By John R. Poteat**

THE continued growth of the Real Silk Hosiery Mills, Indianapolis, Ind., necessitated the construction during 1926 of a new full-fashioned knitting building. Property was acquired to the north of and across the street from the main knitting building of the company, the size being about 100 x 190 ft., giving a ground area of 19,000 sq. ft.

With the exception of the dyehouse and the boiler plant, all of the other buildings of the plant are of mill construction, and it was necessary in the case of the new building to decide on the type of construction best suited to full-fashioned knitting. The delicate adjustments necessary and the length of the machines made a rigid floor construction desirable. On the other hand, the necessary carrying capacity of the floor is not as great as for many other industries. While the machines themselves are comparatively heavy, two machines occupy, with aisles, a space of about 480 sq. ft., which makes the floor load requirement for machines alone easy to provide. To provide against vibration, and for general uses, the building has been designed for a floor load of 125 lbs. per sq. ft.

In order to get rigidity and economy at the same time, it was decided to build the plant of reinforced concrete, using the concrete joist construction, which for the loads encountered and the column spacing required was more economical than flat slab construction.

Layout to Fit Machines

The next feature of the building to be determined was its width. This in turn depended on the length of the full-fashioned machines. Since the leggers are longer than the footers for the same number of sections per machine, the length of the legger was the determining factor in width. The older knitting mills are designed to take one machine across the building. However, with the modern daylight construction, adequate natural illumination is available at the center of a building designed for two machines across. Accordingly, the double width was chosen. With machines 35 ft. long, a table at the inside end of each occupying 2 ft., and a 3-ft. aisle along the wall, a total of 80 ft. for two machines was needed; and with a center traffic aisle of 6 ft., an inside width of 86 ft. seemed proper. The wall thickness added about 4 ft. in the first story, making the total width necessary about 90 ft.

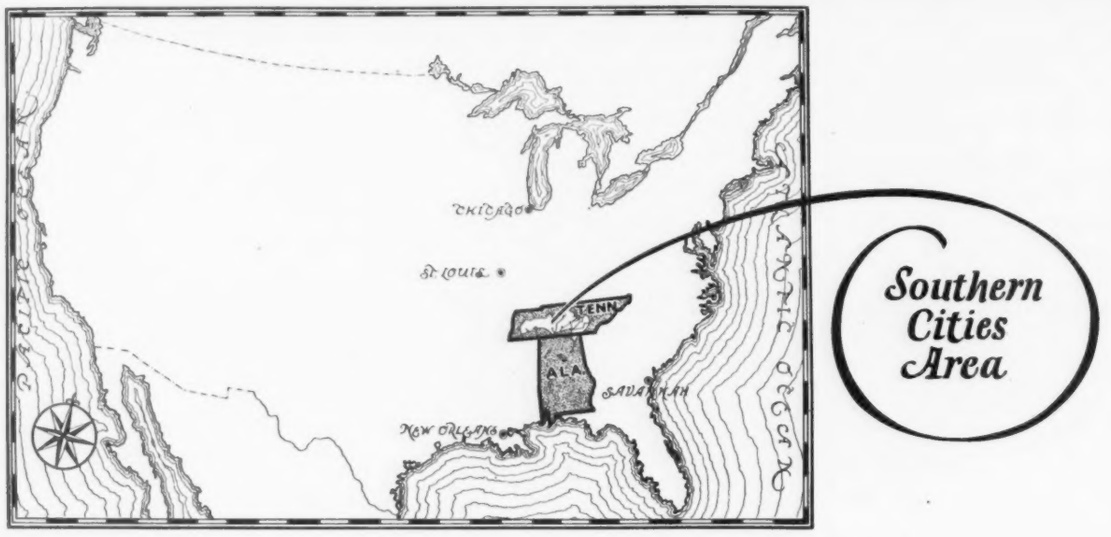
The lot being 100 ft. wide allowed the stair facilities in the east end to be built outside the building and partially so in the west end. The west, being the main stairway, necessitated a somewhat greater space. Inasmuch as the new building is across a narrow street from the other buildings, it was decided that, in order to interfere as little as possible with the side wall illumination in either building, to throw the extra 10 ft. in width not occupied by stairs into a court on the side facing the existing plant. Thus the general floor dimensions were fixed.

With a width of 90 ft., it was considered that a story height of 14 ft. 6 in. would allow ample light, and so this dimension was chosen except for the fourth story, where 14 ft. is the height. By the design chosen it was possible to install sash clear to the ceiling, and thus obtain maximum window area.

The column spacing presented some interesting study. With a width of 90 ft. the number of interior columns across the building and spans could be as follows: (a) 2 columns 30 ft. spans between; (b) 3 columns 22½ ft. spans between; (c) 4 columns 18 ft. spans between. The disadvantage of "b" is that one row of columns would occur in the center of the main aisle and thus impair the space for material handling purposes. With "c," after the machines were installed the space between the first and second columns from either side would be inaccessible unless excess space were provided between the backs of the machines, which would only be effec-

New Building at Real Silk Hosiery Mills for Full-Fashioned Knitting

* Lockwood, Greene & Co., Inc., Chicago, Ill.



What SOUTHERN CITIES Offer—

Practically every section of the South has its "hat in the ring" for textile mills. Out of the swirl of claims and counter-claims—we submit SOUTHERN CITIES for the consideration of progressive far-seeing mill men.

Here in an area of 11,000 square miles, comprising 81 cities and towns, is found to a high degree the elements that make for profitable mill operation. Let us give you the facts—

LOCATION—The SOUTHERN CITIES area is a vast territory served by the SOUTHERN CITIES Power Company in Tennessee and Alabama. Geographically this territory is in the heart of the South. It is interesting to note that it is about equal in distance from Chicago and New Orleans, and St. Louis and Savannah. It offers mill men a centralized location—convenient to markets and raw material.

LABOR—Is an all important consideration in any industrial locality. Special emphasis is laid on the character of labor found in SOUTHERN CITIES. It is almost solidly of Anglo-Saxon or Scotch-Irish mould. Loyalty is a reality. Workers here come of a rural environment that is distinctly favorable to industry. Contentment reigns. Wage scales are low by comparison on account of the favorable climate and lower cost of living.

POWER—Textile producers locating in SOUTHERN CITIES are assured of a continuous supply of dependable power. The SOUTHERN CITIES Power Company operates nine hydro-electric plants and five steam plants. In addition this system is interconnected with other power companies at three points. Potential power resources are extensive.

RAW MATERIAL—To most textile men "raw material" means cotton. Cotton in the raw and in yarn form is close to a mill man locating in SOUTHERN CITIES. Under this heading might also be mentioned coal. Coal in SOUTHERN CITIES is cheap and high in calories.

TRANSPORTATION—Four major railroad systems traverse SOUTHERN CITIES territory. Mill men are assured of excellent facilities for getting their products to market.

CLIMATE—In this Tennessee-Alabama region the climate is with you. The average annual temperature is 59 degrees. Health flourishes.

COOPERATION—The citizenry of SOUTHERN CITIES are real cooperators. They have formed a unique organization to aid manufacturers. This is SOUTHERN CITIES Associated, an Organization of *Service.*

We shall supply further information—gladly.

tive at the columns. This would cut down the capacity of the building by at least two machines per floor.

Thus scheme "a" was chosen. The spacing of columns along the building was chosen as 13 ft. 6 in. This allows two machines per bay, with ample working aisle and space for access to the yarn boxes on the backs of the machines.

The building has four stories and a basement, the three upper floors for leggers and the first floor for footers. The basement is used for general storage and supplies. It is connected by a tunnel under the street with the dye house. Bridges connect the new building with the other buildings at the second and fourth floors.

The heating is provided by a direct radiation system which is controlled by Johnson Service Co. thermostatic stations from a number of points in the room, thus giving more uniform conditions throughout. The system is designed to provide 75 deg. F. throughout, with 10 deg. below zero outside.

The power supply for the machines is distributed from panels in the basement. The feeders which are installed in the columns take two machines each per floor, a total of eight machines on a feeder. An outlet box is provided on the columns near the floor with knockout so that the connection to the machines may be easily installed. Lighting is by Cooper-Hewitt mercury vapor lamps throughout. The building is supplied with a sprinkler system, elevator, and the necessary toilet facilities to make it a thoroughly up-to-date installation.

The building was constructed in the winter, the first concrete being poured for footings early in January. Two floors were turned over to the Real Silk Hosiery Mills' officials on April 1, ten days ahead of schedule. The construction work was carried on by Wm. P. Jungclaus Co., Indianapolis, and the design and supervision were handled in the Chicago office of Lockwood, Greene & Co., Inc.

Cliffside Mills Expand and Add New Lines

Build New Bleachery and Finishing Plant—Reorganize Machinery Equipment, Add New Machinery, and Replace Old—Partially Electrify the Mills and Install New Lighting—Build New Filter Plant—Diversify Products by Adding New Lines

*By H. C. Swannell**

CLIFFSIDE MILLS, Cliffside, N. C., is one of the southern textile manufacturing plants that made extensive improvements and plant additions during 1926. These embodied machinery reorganization to give greater manufacturing efficiency and add new lines of products, partial electrification, partial relighting of plant, and the building of a new bleachery, new finishing plant, new filter plant, and raw water pump house.

The mill which formerly was engaged in the manufacture of ginghams was reorganized and departments balanced to include the production of terry towels. With this object in view, some new machinery was installed, partly for replacement of worn out equipment and partly for balancing the departments.

New Machinery Installed

Manufacturing processes in the four-story mill are arranged with picking, carding, and roving on the third floor; spinning on the fourth floor; and weaving on the first and second floors. Bleaching and finishing are done in separate buildings.

New machinery installed in the main mill includes two new breakers with feeders, five automatic feeders, distributor, 39 cards, one 52-spindle slubber, four 64-spindle slubbers, six 120-spindle intermediates, two 96-spindle intermediates, 16 deliveries of first drawing, and 16 deliveries of second drawing.

There were also installed 314 40½-in., 2 x 1 box automatic Crompton & Knowles terry towel looms; 36 of these being 20-harness, and 278 being 4-harness; also 198, 28-in. automatic Model E Draper looms. All of these looms are installed on the second floor, and driven by individual motors of ½ h.p. capacity. To make room for the new equipment, old looms were discarded. Looms on the first floor were left undisturbed.

Partial Electrification

Formerly, the mill was all mechanical drive with the power obtained from waterwheels, steam engine, and low pressure steam turbine driving a generator. The mechanical hook-up was such that either engine or waterwheels, or both, could be utilized to drive the machinery. Connected to the line shafting is a synchronous motor, which is now used as a generator. The new arrangement utilizes three sources of power: namely, mechanical, generated, and purchased power.

In electrifying, the mechanical power was taken into consideration, with the result that practically all of the spinning and all of the first floor weaving were left unchanged. Motor equipment was provided for driving the picker room with a motor to each machine; moderate size motors were provided for driving carding and roving machinery in groups; four-frame motors were installed for a small part of the spinning; and individual motors were installed for the new looms. In addition, the textile manufacturing machinery equipment in outlying buildings is motor driven.

For the control and protection of circuits to the motors, new switchboard equipment has been provided. A special feature is that each power feeder panel is provided with double throw oil circuit breakers, so that power from an outside source may be utilized for driving any portion of the plant.

The new bleachery and finishing plants are housed in what may be considered as two separate buildings. Both are two-story structures of combined brick, steel, and reinforced concrete construction. The outside walls are brick, with steel sash windows; the beams are steel I-beams; columns are cast iron, and floor slabs are reinforced concrete. The roof is of the same construction as the floor slabs.

Installed in the bleachery on the second floor are a folder, 8-unit automatic loop dryer, loop conditioner, etc. On the first floor are 2-roll double padder, scutcher, squeezers, reels, and kiers for a complete bleachery.

Equipment for the finishing plant includes a 5-roll and a 3-roll calender; two cloth folders, book folder, two board winders, sewing and rolling machine, brusher, starch mangle, dry cans, tenter, and two presses.

Filter Plant

The filter plant, having a capacity of 45,000 gals. per hour, is located within a short distance of the mill. The structure is of combined brick and reinforced concrete. The foundations and settling basins are concrete; the superstructure is brick. Steel sash windows are used throughout. Gravity system of filtration is used in this

Cliffside (N. C.) Mills; New Buildings at the Left

* J. E. Sirrine & Co., Engineers, Greenville, S. C.

Compare the AREA ~ then the SPINDLES/

The growth of the textile industry in the two Carolina States has been phenomenal granted—but contrary to the impression of some people, this territory is far from congested. Massachusetts, Rhode Island and Connecticut, according to 1924 census, have 15,884,000 spindles. These states comprise an area of 14,555 square miles. The The Carolina States have 11,184,000 spindles and aggregate an area of 83,514 square miles. A high percentage of the Carolina spindles are installed in a territory much longer than Massachusetts but corresponding roughly to its area.

The unoccupied area referred to is now dotted with numerous small towns and cities supported largely by agriculture and require the payrolls of industry to balance their trade. This area can offer manufacturers a labor situation, not likely to become a labor problem, where the local manufacturer may secure close at hand from the farm districts his labor, food supplies, and cotton for milling purposes. There is an excess of rural population seeking employment, which is growing as indicated by the birth rate exceeding the death rate by 16.85 per thousand in these states. Other conditions essential to low production costs are favorable in these regions.

Write for particulars. Inquiries are kept confidential. Accurate information is gladly furnished without obligation.

Carolina Power & Light Company serves 143 towns and cities in the Carolinas and offers assurance of an abundant supply of hydro-electric power

Carolina Power & Light Company

INDUSTRIAL BUREAU - - - - RALEIGH, NORTH CAROLINA

plant, which furnishes filtered water for manufacturing purposes. The equipment consists of 600,000 gal. clear water basin, settling basin, two W. & T. Type B dry chemical feeders, pumps, etc.

The filter plant will purify water for manufacturing purposes for the present; however, arrangements have been made whereby drinking water for the community of about 2500 people can be obtained from this same source. Approximately 600 ft. away, on the edge of the river, is the raw water pump house, which is of reinforced concrete construction. In this building is installed a 1,000-gal. per minute centrifugal pump, direct-connected to a motor. Water is pumped from the river against a 110 ft. head into the settling basin of the filter plant.

J. E. Sirrine & Co., engineers, Greenville, S. C., have been in charge of these improvements and enlargements. Westinghouse Electric & Mfg. Co., Charlotte, and Huntington & Guerry, electrical contractors, Greenville, S. C., have furnished and installed electrical equipment.

Hanes Hosiery Mills in New Plant

Planned for a Production More Than Double That of Former Mill—Comprises Two Buildings

ONE of the most important mill construction projects in the hosiery field completed during 1926 was the erection of the new plant of the Hanes Hosiery Mills Co., at Winston-Salem, N. C. This plant is important not only from the extent to which it increased the production of the company but also because of the very modern character of the construction and equipment.

Although operating at present on a basis of 6,000 dozen pairs of women's seamless hosiery a day, the new plant is planned for an ultimate capacity of 10,000 dozen per day, or more than three times the output of the old mill.

Located on a four acre site, the buildings comprise the main mill, a two-story structure, 500 x 125 ft., with basement under one-half; and a one-story dye house, 125 x 90 ft. The plant is of daylight construction with monitor roof. Erection was under the supervision of Lockwood, Greene & Co., engineers, of Boston, handled through their Charlotte office.

The Main Building

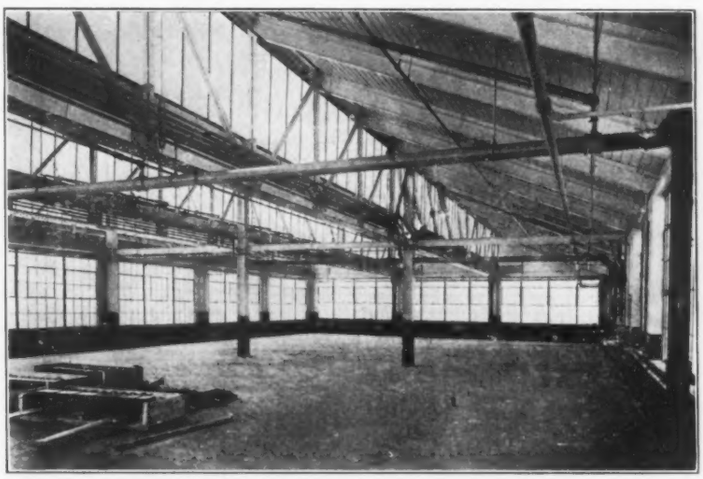
From the standpoint of lighting and layout of equipment, the top floor of the main building is an ideal one. Here are located the knitting, seaming, looping and winding, all in one great room. The equipment includes 800 Scott & Williams Model K machines; 70 seamers from the Union Specialty Machine Co.; 180 loopers, some from the Southern Textile Machinery Co. and some imported from Germany; and 48 Jacob K. Altemus winders. Ample lighting at all times is insured through the use of Cooper Hewitt Work Lights.

The first floor of the main building is devoted to the boarding room and the finishing room. The equipment of the former comprises 24 Proctor automatic boarding, drying and stripping machines furnished by Proctor & Schwartz, Inc. of Philadelphia. The partial basement under the main building is devoted to storage.

Dye House

The dye house, a one story structure so that ample ventilation may be secured from the roof, is equipped with ten rotary dyeing machines and three extractors, all supplied by the American Laundry Machinery Co., Cincinnati, O. The piping and sprinkler systems throughout were installed by the Grinnell Co., Providence, R. I.

The officers of the Hanes Hosiery Mill Co. are James G. Hanes, president; James N. Weeks, vice-president; P. J. Bitting, secretary. The product is sold through Chas. Chipman's Sons, New York. The company purchases its power. The Allis-Chalmers Texrope drive is employed in the operation of its equipment.



Interior View of Addition to Connellsville Silk Co. Showing Roof Trusses Designed to Eliminate Columns

Silk Throwing Mill Enlarges

Connellsville Silk Co., Connellsville, Pa., Erects Two Additions—Provision for Further Extension

THE owners of the Connellsville Silk Co., Connellsville, Pa., decided to increase the size of the existing plant and add more floor space in a new one-story extension to the north, because it was necessary to ease up on the crowded conditions in the various departments. The new space was laid out for silk throwing, but can be adapted to weaving, if desired. The column spacing allows for any class of silk manufacture or other textile work. In addition, a three-story extension has been constructed.

The three-story brick extension that has been constructed is 48 ft. 11 in. long, by 32 ft. 8 in. wide, and extends north from the older three-story west wing of the plant. It is a duplicate of the old building. The walls are brick and support steel beams, eliminating interior columns. The steel beams carry the planking on which rests the maple floor. The windows are wood except at the north end, where they are steel with wire glass. Those windows which are south of the fire exit are hollow metal with wire glass. The roof is wood, covered with smooth roofing and is supported on wood trusses spanning from wall to wall.

One-Story Extension

The one-story extension to the north of the three-story extension is 62 ft. 2 in. wide by 120 ft. long. It is built with brick walls on the south, east, and west sides, with steel columns supporting steel trusses and purlins which carry a wood-plank roof covered with smooth roofing. The windows are of steel. The entire north wall is of temporary wood construction, with steel sash, which will permit easy extension to the north by duplicating the present bay spacing, either singly or in multiple. Only two interior columns are used in this extension, giving a column spacing of 20 ft. 6 in. north and south by 60 ft. east and west. The sawtooth roof construction is obtained by placing the roof trusses in the vertical faces of the sawteeth. Clearance below the trusses is 12 ft. The sawtooth sash are of steel glazed with wire glass, the center 60 ft. of the middle sawtooth being made movable with gear operation from the floor. The entire first flooring in the one-story and three-story buildings is maple on a tar

New Knitting Mill and Dyehouse of Hanes Hosiery Mills Co., Winston-Salem, N. C.

rock base on the ground, and is laid diagonally.

A steam box was constructed in the south wall of the one-story building and built with 8 in. terra cotta inside walls, and 8 in. outside wall, with 2 in. air space between the two walls. The roof of the steam box was made of concrete and insulated. The existing silk vault was extended north about 10 ft., and was built with 12 in. brick walls, concrete and steel roof, with concrete floor on ground.

The entire area is under sprinkler protection with hose outlets on riser in the one-story building. The existing boiler plant was increased with one additional boiler, making two in all, supplying low pressure steam to heating units and high pressure steam to steam box. The old heating system was revamped and put in good working order. Lockwood, Greene & Co., Inc., New York, engineers, were in charge of these enlargements and improvements.

Joanna Cotton Mills

Plant of The Stewart Hartshorn Co. Enlarged by Erection of Manufacturing Building—Village Improvements

*By J. C. Hipp**

DURING 1926, the Joanna Cotton Mills made further improvements to their properties at Goldville, S. C., consisting of the construction of a slasher building addition to the mill, and the erection of fifty operatives' houses, a nursery building, the Joanna Inn, school auditorium, and agent's house. Street and sanitary improvements were also carried out.

A two-story slasher building, 66 ft. wide by 134 ft. long, of slow-burning mill construction type, was erected adjacent to the main mill, with connecting passageways between the buildings. The second story is used for slashers and tying-in room; the first story is equipped for spooling and warping. The slashers, spoolers, and warpers were moved out of the main mill, making room for additional looms and spinning frames. An addition of 4,864 new Fales & Jenks spindles was made, bringing the total installation to 31,184 ring spindles. Seven 96-in. Draper looms were added, making a total of 702 looms. When the plant was purchased by the present owners in 1924, it contained 14,244 spindles and 336 looms, so that the capacity has been more than doubled.

Village Improvements

Fifty operatives' houses, consisting of ten 6-room houses and forty 4-room houses, were added during the last year. All of these buildings are of frame construction, varying in plan to gain individuality. They are plastered inside, some weatherboarded with wide boards, and others covered on sides with wood shingles. A two-story nursery building of frame construction was built and equipped to take care of infants whose mothers are employed in the mill. A trained nurse is in charge, and free medical attention is given daily.

A companion building to the nursery is the Joanna Inn, constructed during the last year to meet the needs of the officers of the mill and those connected with the school who do not have their own homes. The Inn also provides accommodations for the occasional visitor, and has already proved a most popular addition to the village.

The school facilities were improved by converting the old school auditorium into class rooms and erecting a separate one-story auditorium of frame construction, connected to the school building by a covered passageway. A steam heating system was installed in both buildings. The new auditorium has a capacity of 300 seats, and will be used for school purposes, movie house, and other community gatherings. A large stage and a movie projector room are provided; also a small library. All the grammar grades are given here. The high school pupils are transported daily to the city high school in Clinton, S. C.

The agent's house is a one-story brick structure, with four bedrooms, two bathrooms, a large living room, dining room, sun porch and kitchen. Hardwood floors are laid throughout, and the interior finish is of best quality. The building is heated with a Warren Webster modulation steam heating system.

Complete plumbing, water supply, fire protection and sanitary sewer systems were installed for all improvements, tying in with the systems provided in earlier village betterments. Concrete curbs and gutters were laid in all new streets to match the old streets. The management has taken keen interest in the village welfare, and are continuing their policy of furnishing their employes with living facilities and surroundings equal to the best in the South.

Lockwood, Greene & Co., Inc., were the engineers. The officers of the Joanna Cotton Mills are Stewart Hartshorn, president; Harold V. Hack, Vice-president; and E. L. Dargin, secretary and treasurer. William A. Moorhead is the resident agent. The plant is engaged principally in the manufacture of muslins for window shades, which are shipped to the bleaching and finishing plant of the parent company.

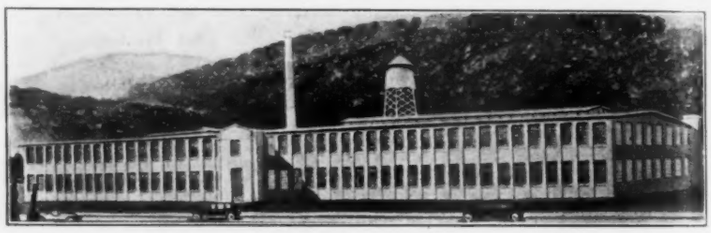
*Engineer, Lockwood, Greene & Co., Inc., Atlanta, Ga.

Expansion in Alabama

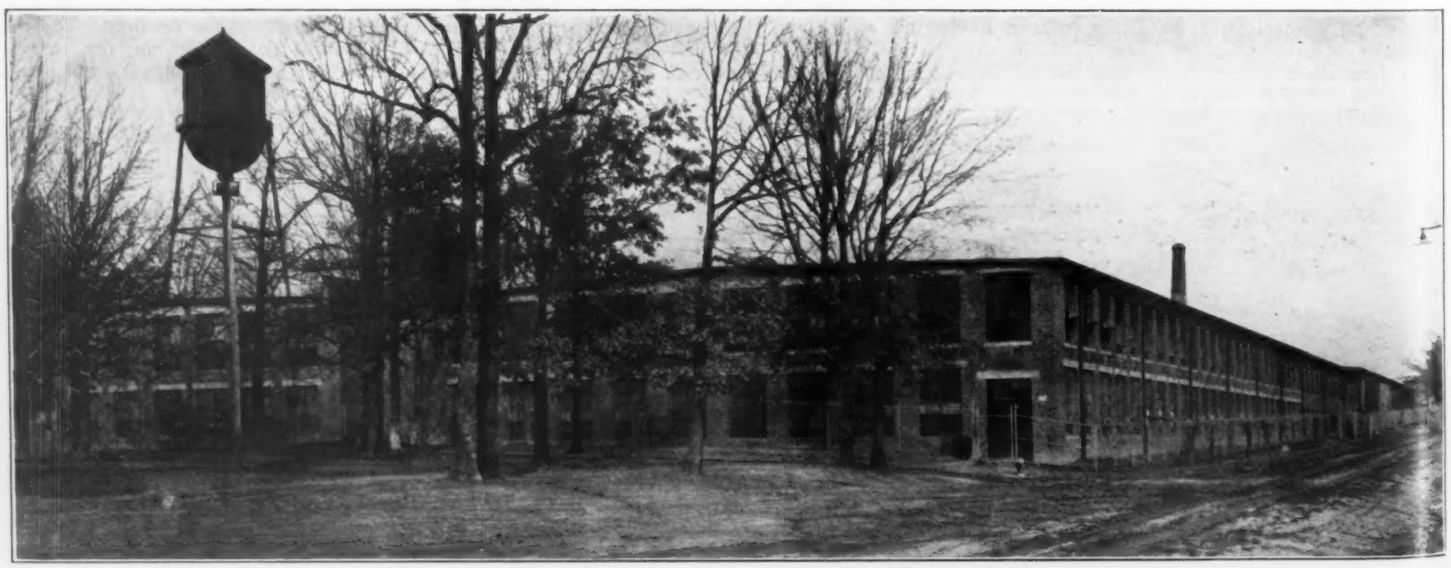
Plant of Sauquoit Spinning Co. at Gadsden—New Weave Shed for Langdale Mill

THE new plant of the Sauquoit Spinning Co., located at Gadsden, Ala., started production about January 1, 1927, operating 20,000 spindles on carded and combed yarns. This new development is of particular interest in that this project is representative of the eastern textile mills that are moving South. The officials of the Sauquoit Spinning Co., of Utica, N. Y., after a careful investigation, chose Gadsden as the site for their new plant.

The initial development consists of a main mill building, some 400 ft. long, two stories, by 100 ft. wide. The picker room wing, a two-story building, some 80 ft. long by 52 ft. wide, is located on the rear side of the mill opposite the card room, and accommodates, also, the machine shop and conditioning rooms. Immediately adjoining the picker room is a one-story ageing room, 35 ft. wide by 62 ft. long. The boiler room, a fireproof building, adjoins the ageing room and



Sauquoit Spinning Co., Gadsden, Ala.



Joanna Cotton Mills; New Slasher Building at Left

Crompton Mills, Crompton, R. I., famous for the manufacturing, cutting, dyeing and finishing of the finest Velveteens and Corduroys, from the raw cotton to the finished product

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In Crompton, R. I., everybody knows everybody else and the mill of the Crompton Company represents something more than a place of employment. Since 1807, rising generations in "The Velvet Village" have looked to the mill as the star of their ambition, inspired by the pride of fathers and mothers who helped to make Crompton a famous textile name.

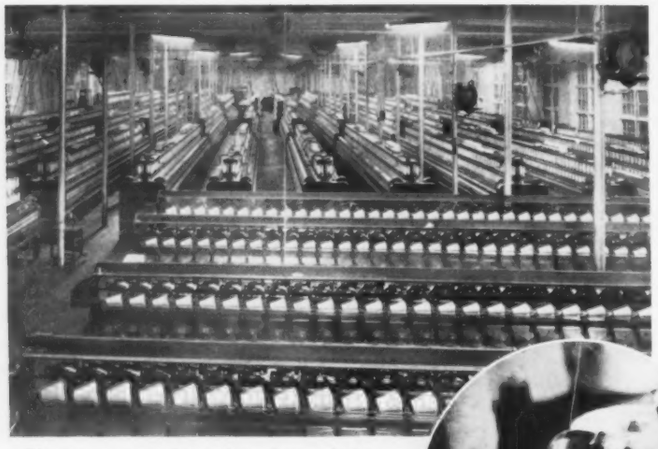
For nearly ten years now, Crompton craftsmen have known the advantages of working with Cooper Hewitt Work-Light. Mr. G. Richmond Parsons, President of the Company, puts it in these words: "Finding that many processes required *perfect lighting* in order to produce *perfect goods*, Crompton, after long and careful investigation, installed Cooper Hewitt lighting for all such processes. The result has exceeded anticipations."

The weavers of Crompton, with their tradition to uphold, consider Cooper Hewitt the best light to work by for the same reasons that dictate its choice in every highly competitive field. Less waste, less lost time, greater quantity and better quality never fail to convince. Cooper Hewitt Electric Co., Hoboken, N. J.

COOPER HEWITT

BETTER THAN DAYLIGHT

Cooper Hewitt Work-Light is overhead illumination that gets down into every machine and kills shadows



The weave room of the Cross Cotton Mills, Marion, N. C., always looks like this. The Cooper Hewitt installation means that no caprice of daylight ever interferes with uniform output and quality

You cannot look at a picture of a Cooper Hewitt lighted workroom without realizing that there is "something different" about it. The air seems clear, because there are no "high spots" or "low spots" to fog the impression. Everything seems literally to be in a light bath, which means ideal general illumination. And the fine detail of machines, right down to the very working point, stands out so sharply that you know Cooper Hewitt to be ideal job lighting as well.

These pictures are working demonstrations, in miniature. There is no better evidence of what any light can do, except experience with it. If pictures from your own plant could not match them, for both general effect and sharpness of detail, you have a great deal to gain by seeing Cooper Hewitt for yourself.

If you have ever tried to handle the myriad needles, concentrated in the small diameter of a machine like this, you know it as an "acid test" of lighting. Photo shows how Cooper Hewitt does it—without glare and without shadow—for every machine in the plant

The advantages of mercuryvapor lighting are the sort that you can measure

It would be hard to find a greater contrast in industrial operations than the thumping punch presses of a plant like Ford's and the delicate jacquard looms of a mill like Lund Textile, at Farnumsville, Mass. Yet Cooper Hewitt Work-Light satisfies the specific requirements of both.

In the Ternstedt plant at Detroit, powerful hydraulic presses stamp out fenders and other automobile parts. In the Leeds & Northrup plant at Philadelphia, sensitive fingers assemble and adjust the fine mechanisms of pyrometers, etc. And in both places, again, you find Work-Light.

The AC Spark Plug Company says that it gives better satisfaction than daylight on the assembly and inspection of jewels and speed cups for its speedometers. The Eastman Kodak Company employs it for the inspection of its lenses. C. H. Masland & Sons credit it with increasing the output of their carpet looms 3.8 per cent. The Holeproof Hosiery Company obtained a similar result on both knitting and looping . . . . .

Deep in the works of any machine — loom, lathe or punch press — there are fields of reduced intensity which light doesn't reach directly. Cooper Hewitt provides more seeing power at these points than any other light. This picture gives an idea of what this means to eyes working deep down in a loom harness

But you can see for yourself in your own plant. You obligate yourself in no way by requesting and using a trial installation. Address Cooper Hewitt Electric Company, 85 River Street, Hoboken, N. J.

COOPER HEWITT

BETTER THAN

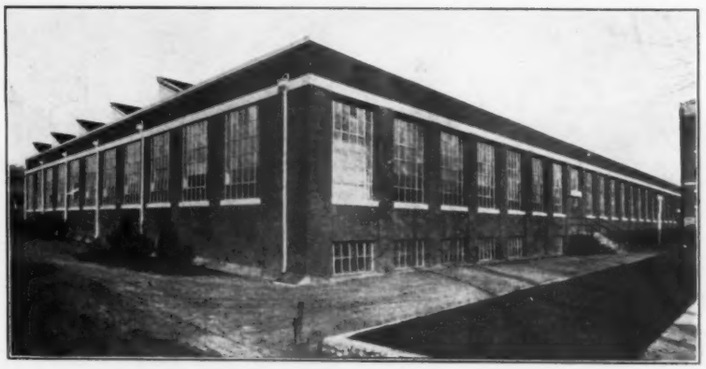
DAYLIGHT

houses all of the pumps, boilers, etc., required for heating the mill and furnishing process steam. A battery of warehouses, together with an opening room and waste room, parallel the spur track of the T. A. G. Railroad, which comes into the property at right angles to the main mill.

In design and appearance, the various buildings have been constructed in accordance with the best practices of modern southern textile mill design. Steel beams, cast-iron columns, brick walls, and steel sash were used in the construction of the main buildings, whereas the warehouses are of the standard mill type, 50 x 100, with fire walls separating the various compartments. The main mill has a monitor on the second floor, occupying the entire center span immediately over the spinning frames.

In general, the mechanical equipment for this new unit consists of a vacuum system of heating, with automatic heat controls; an improved system of fire protection consisting of city supply and a 75,000 gal. tank and tower, and a modern system of electric wiring for both the power and light wiring. The machinery layout calls for the required amount of carding, roving, and spinning machinery for 20,000 spindles. Group drives are used throughout the mill, with units of two and four-frame motors. The Alabama Power Co. furnishes power to the transformer station, and from this point it is taken into the mill, through the switchboard, and distributed to the various departments in conduit.

Robert & Co., Inc., architects and engineers, of Atlanta, were engaged by the Sauquoit Spinning Co. to handle their construction and engineering problems and assist the company in putting this plant into operation. Rockwood Sprinkler Co. were the mechanical contractors for the heating and fire protection system. The American Moistening Co. furnished the humidifiers. The R. D. Cole Manufacturing Co. installed the tank, tower, and boilers. A. K. Adams & Co., of Atlanta, were the general contractors. Elevators were furnished by the Park Manufacturing Co. All of the electrical apparatus was furnished by the Allis-Chalmers Co., and the wiring installation was handled by the Walker Electric & Plumbing Co. W. H. Merriman, general manager of the Sauquoit Spinning Co. was in direct charge of the entire project for the owners.



Langdale Mill's New Weave Shed

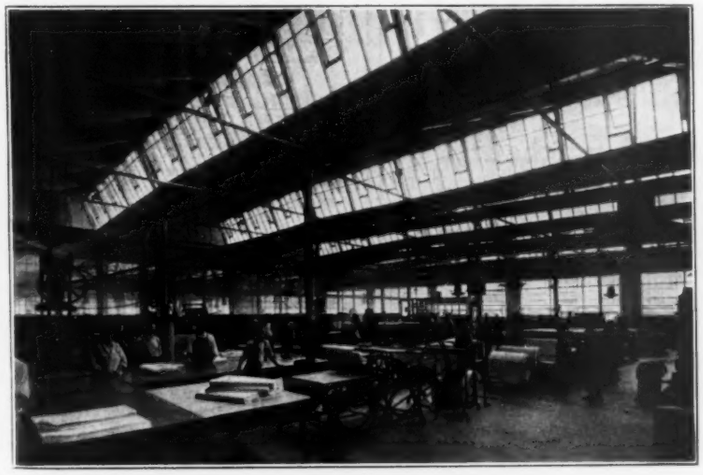
Langdale Mill

The new weave shed for the Langdale Mill, at Langdale, Ala., represents another unit in the extensive expansion program being carried out by the parent company, the West Point Manufacturing Co., of West Point, Ga. It is a sawtooth building 310 ft. wide by 124 ft. long, to accommodate approximately 400 looms and provide space also for a large cloth room. This new shed has been designed so that when the final unit is built, the shed will accommodate 1,000 looms.

To provide the maximum amount of light and at the same time allow the owners to utilize the maximum amount of their yard area, a sawtooth shed was decided upon. Warehouses were removed to provide for the new site, and on account of the close proximity of the Chattahoochee river to the building site, Raymond concrete piles were driven under the entire area of the new building.

In general, the design of the weave shed consists of a modern sawtooth type of building, the sawtooth running continuously the full width of the shed. The columns, which are of cast iron, 7 in. in diameter, have a spacing of 21 ft. 4 in. x 25 ft. 9 in., and support the roof framing which is made up of steel beams. The skylights, which were furnished by the Drouve Co., are made of copper, and the sash are glazed with ¼ in. wire ribbed glass throughout. Metal condensation gutters have been provided for each run of sash. To prevent condensation on the roof ceiling of the shed, a layer of Celotex roof insulation was applied over the entire roof deck before the built-up roofing was laid. All of the side walls, with the exception of the north wall, are of brick, the fenestration being provided by steel sash glazed with ⅛ in. factory ribbed glass.

The mechanical equipment consists of a complete system of humidifiers, furnished by the American Moistening Co.; a Warren Webster system of Vacuum heating; and a complete system of fire protection. Walker Electric Co., of Atlanta, installed the electric lighting system. Robert & Co., Inc., architects and engineers, of Atlanta, were the engineers associated with the owners in carrying out this project. The West Point Iron Works were the general buildings contractors.



Interior of Langdale Weave Shed Showing Cloth Room and Sawtooth Construction

Addition to Columbia Silk Mills

New Three-Story Building to Increase Capacity and Give Better Plant Arrangement

A MODERN addition to the silk mill of Schwarzenbach-Huber Co. at Columbia, Pa., has been built to provide for increased output and to allow certain rearrangements of departments and machinery for the improvement of production and working conditions. The building is semi-mill type, three stories and basement, and is an extension to one of the "legs" of the plant. The overall dimensions are 206 ft. 1½ in. x 58 ft. 3 in., with an outside enclosed stair tower 19 ft. 3 in. x 20 ft. The design was worked out to give the maximum of daylight.

The basement, basement columns, and first floor are constructed of reinforced concrete. The foundations are also of reinforced concrete resting on hard clay and on rock with sand cushions. Evidence that the design and workmanship, as well as the engineering, are first-class is confirmed by the fact that there is not a crack in the basement walls. As the ground is higher on one side and lower on the other than the first floor, it was necessary to provide an areaway on one long side to allow plenty of light and ventilation. On the other long side end there is full natural ventilation and light, as the ground falls off sufficiently. While this is very desirable, it was not absolutely essential as this floor was intended for storage only.

The walls above the first floor level are brick piers of hard burnt common brick laid up in cement mortar. There are twelve bays on each of the long sides with four bays on the exposed end. Each bay has a large ventilating steel sash, glazed with Factrolite glass, except for the bottom course, which is double thick clear glass. Each sash has a reinforced concrete lintel and sill under which is a brick curtain wall.

Weaving on First Floor

The first floor consists of a reinforced concrete slab under the floor, finished with Euboeolith. Euboeolith is a serviceable floor; in three days it is hard enough to truck on and still it is never too hard to keep its natural resilience, which makes it a good floor to stand and work on. The head room had to be limited to a clear run of 12 ft. 6 in. to have the floors meet the existing floor levels. This floor is devoted to weaving and the practicability of the design of flat slab concrete construction has been proved by the quality of the product from the looms.

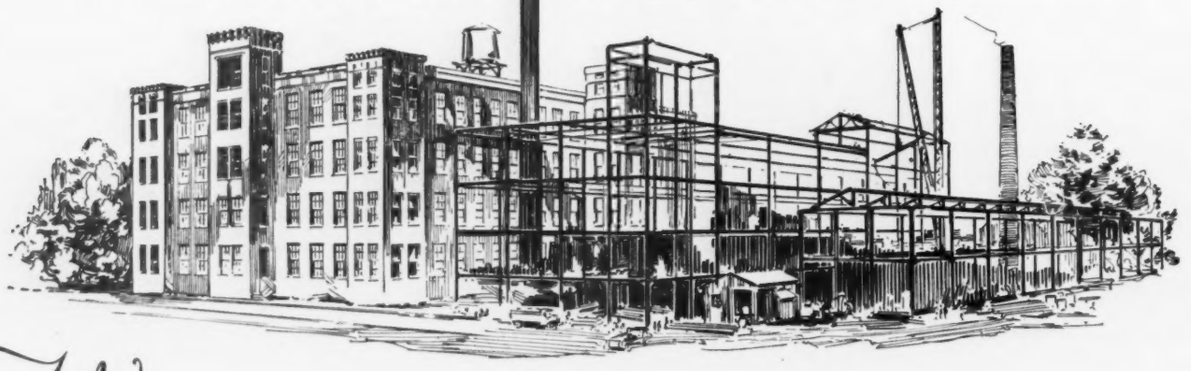
The columns supporting the second and third floors are longleaf yellow pine posts, 10 x 12 in. and 8 x 10 in., respectively. These posts support longleaf pine girders and beams which carry the waterproofed flooring. These floors are finished in a fine grade of rock maple. The second floor is similar to the first except for the floor, and is mainly devoted to winding.

The third floor has a clear head room of 12 ft. 10 in. This floor has a clean sweep as the roof is supported by neatly framed longleaf pine trusses, one to each bay. The greater part of the warping for the entire mill is done on this floor. The warpers are located one to a bay on each side. This allows ample room and ready access on all sides. Due to the high pitched ceiling and the large windows, there is an abundance of natural light. Working conditions are ideal. Roof ventilation is provided for by four large Swartwout ventilators which have proved themselves ample.

Power and Light Equipment

The power and light equipment, installed by the Watson-Flagg Engineering Co., received special study. After long consideration and many scientific observations, it was decided to provide general illumination in this

SPARTANBURG, S.C.



When will you build that Southern Plant?

YOU'VE sensed the great industrial progress of the Southeast. You've been thinking about a Southern plant. . .We want to help you crystallize your thoughts by pointing out, in down-to-facts fashion, the advantages of Spartanburg, South Carolina.

The center of the South's great textile industry, in a county that leads the state in number of spindles and looms! Here you find all the fundamentals of industry. A complete survey of these advantages as they relate to the textile industry has been prepared and is yours for the asking. A survey based on facts, the kind that you want, the kind that you must have when taking a step of this kind.

Write today for the Industrial Survey of Spartanburg, the Hub City of the Southeast. It may be the missing link in the chain of plans on which you've been working. It may help you reach a decision that has been waiting on just such concrete, factful information. Due to our desire to avoid a promiscuous distribution, please make your request for the Survey on your business stationery.

INDUSTRIAL COMMISSION
1110 MONTGOMERY BUILDING SPARTANBURG, S. C.

POWER: In the center of the country's great hydro-electric area, with four large power companies bringing ample power at low rates.

WATER: Four large rivers and many small, bold streams afford an abundant year-round supply for manufacturing purposes, suitable for bleaching.

LABOR: White, all-American, unrivaled for intelligence. With the will to work, and able to produce the higher grade of goods.

TRANSPORTATION: Two trunk lines to the Middle West—two to the Atlantic Coast—and on the main line of the Southern Railroad from New York to New Orleans.

SPARTANBURG

The Hub City of the Southeast

SOUTH CAROLINA

building by installing in certain floors Cooper-Hewitt lights, and in others Holophane No. 621 fixtures with 200 watt lamps, depending upon the type of work which was to be done. In doing this, the engineers had in view the providing of the best possible lighting conditions either for day or night operations.

The power is supplied to each machine with an individual motor, thus providing operating conditions that insure quality in workmanship combined with maximum efficiency. All wiring is in conduit throughout the plant, and current is supplied from the main power plant of the mill. Ventilation is natural. Humidification is provided for by the Mertz system. This is a very simple and inexpensive method.

Heating and Plumbing

The heating, installed by Lindemuth Engineering Co., Inc., is direct radiation provided with a vacuum pump, thus insuring uniform distribution of steam. The units are small and are placed under each window. The conditions are satisfactory and the temperature is quite uniform.

The plumbing, installed by C. C. Kottcamp & Son, is the best available, and although this district has a very liberal code, the code of a first-class city has been adhered to. Each floor has a toilet room provided with first quality china fixtures and nickled fittings. The lavatories have hot and cold water with soap dispensers. Conveniently located on each floor are bubbler-type drinking fountains. The supply to these fountains is a continuous new supply in the lines of deep well water. This water has been analyzed and is shown to be perfectly safe, palatable, and uniformly cold, and is more desirable than any possible combination of iced water.

The entire building interior is painted with three coats of Rice's Mill White, with a 4 ft. 6 in. dado, pearl gray tint. As the finish is egg shell, there is no glare and also no loss in lighting efficiency.

The elevator is high grade Otis equipment, with a capacity of 4,000 lbs. at a speed of 100 ft. per minute. The car platform is 10 ft. long and 6 ft. 4 in. wide. Peele doors are used at shaft openings. The elevator has landings at the basement, first, second, and third floors. The car has a maple floor with heavy wood wainscot on the sides to a height of 7 ft. above the floor. A heavy wire grille covers the top and upper part of the sides.

The building is equipped with a complete Cascade sprinkler system protecting the entire area. This is connected to the existing yard system of the mill. The yard system is provided with a 50,000 gal. gravity tank, and a 1,000 gal. fire pump fed from city mains through a large storage reservoir. All operating machinery in this building is provided with individual motors, and provided with oil switches of the latest type.

The complete plans for this building and its mechanical equipment were prepared by Clark, MacMullen & Riley, Inc., industrial engineers, New York City. The designers constantly maintained a qualified engineer on the job as a check upon the workmanship of the construction and quality of the material used. The building was constructed by D. S. Warfel.

New Building of Winding, Warping, and Weaving, Erected by Schwarzenbach-Huber Co. at Columbia Silk Mills

Addition to Uxbridge Worsted Co. Plant

Structural Steel and Brick Building, Three Stories High, Increases Manufacturing Capacity at Uxbridge, Mass., and Allows Better Organization of Departments—New Cards, Mules, Looms, and Nappers Installed—All Machines in New Mill Are Motor Driven

IN October, 1925, the Uxbridge Worsted Co., Inc., began the construction of an addition to the plant at Uxbridge, Mass. The building was finished in June, 1926, and the installation of machinery was started immediately, most of the equipment being moved from other departments, as the new mill was erected primarily to allow a reorganization to be made of the overcrowded rooms in the older plant. New equipment installed in new and old buildings as a result of this addition includes 4 sets of cards, 8 mules, and 48 automatic looms, increasing the manufacturing capacity about 10%.

Steel and Brick Construction

The site of the addition is east of the existing plant, the new mill running approximately North and South. The skeleton of the building is of structural steel, riveted and fireproofed, and the whole structure, although at present but three stories in height, is designed to receive three more stories of similar construction when the space is desired. The roof is such that the three additional stories can be built on top of the present structure without breaking through the roof, thus avoiding any possible interruption of the use of the mill while construction is going on.

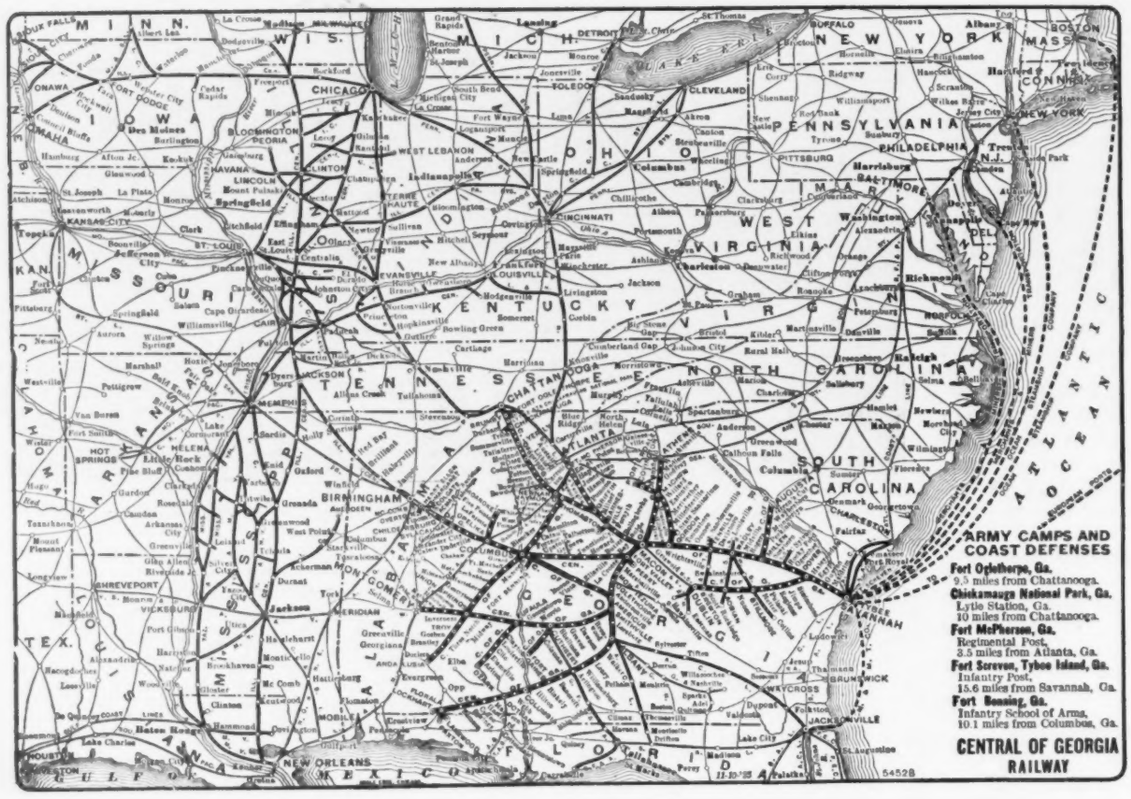
The outside walls are finished in red brick with granite trimmings. The windows are steel sash, supplied by the Detroit (Mich.) Steel Products Co., and constitute about 90% of the wall surface, giving a maximum of daylight for manufacturing purposes. Top flooring is maple, 2¼ in. face, giving an ideal working and trucking surface. Perhaps the most outstanding feature of the construction is the spacing of columns. The building is 244 ft. long and 80 ft. wide. There are two rows of columns which are spaced 16 ft. apart transversely, and 16 ft. apart longitudinally. This leaves a space from the columns to the walls on both sides of 32 ft. inside, and an alley through the center of the mill 16 ft. wide. The steel columns, beams and girders are fireproofed. Angle iron guards, 5 ft. high, protect the columns. The layout seems to be almost ideal for the owners' purposes. As is usual in the best mill construction, the stair and elevator towers are built outside the lines of the main mill so that the floor space is uninterrupted.

Light for Inspection

The E. D. Ward Co., Worcester, Mass., were the builders, and worked with the engineering department of the Uxbridge Worsted Co. in laying out and developing the owners' ideas. The structural steel work was done by the Eastern Bridge & Structural Co., Worcester, Mass. A particularly interesting detail is the type of windows used in the northerly end of the first story to furnish daylight for the cloth perches and inspection department. These are a special sash designed by the builders. They are very large single lights of plate glass, with unique tilting ventilators located so as not to obstruct the effective lighting.

As laid out, the new mill gives a better arrangement of departments, lessens material handling, back-tracking, etc., and reduces manufacturing costs. The floors of the new building are on the same levels as the floors in the adjoining building, and openings at each floor permit convenient trucking of materials in process from the older plant to the new building. A Payne elevator of 3-ton capacity, 8 x 12 ft., with Peelle doors, serves the three floors of the new building and the corresponding floors of the old mill. Ample fire protection is provided for the new building by a wet pipe sprinkler system that has been installed by Allen & Reed of Providence. The heating is direct radiation, steam pipes running along the side walls. The heating system was installed by Tucker & Rice, Worcester, Mass.

Particular attention has been paid to the lighting, all electric lighting equipment being furnished and installed by the Whitall Electric Co. of Westerly, R. I. A total of nine hundred 100-watt lights are used. Of



THE Central of Georgia Railway has 1920 miles of lines reaching from Chattanooga and the Piedmont Section of Georgia and Alabama to Florida and the port of Savannah. Steamship connections to New York, Boston, Philadelphia, Baltimore and trans-Atlantic ports.

These lines serve 60 counties with 60 per cent of the population of Georgia and 22 counties with 40 per cent of the population of Alabama.

The 60 counties in Georgia produce 50 per cent of the cotton, 65 per cent of the peaches and 75 per cent of the articles manufactured in the state.

The 22 Alabama counties produce 33 per cent of the cotton and 60 per cent of the articles manufactured.

Hydro-electric power lines belt almost the entire system. The Central of Georgia serves the coal fields of Alabama and Georgia direct.

Of the 245 textile plants in Georgia 138, or 56.3 per cent, are in towns and cities served by the Central of Georgia. Of the 102 plants in Alabama 33, or 32.3 per cent, are served by the Central of Georgia.

Industrial surveys of this territory have been made by competent engineers and the facts, briefly stated, are in illustrated booklet form. They may be had for the asking.

CENTRAL OF GEORGIA

J. M. MALLORY
General Industrial Agent

CENTRAL OF GEORGIA RAILWAY
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Savannah, Georgia

special interest are groups of daylight lamps at the cloth perches on the first floor where the inspection of the finished goods is done.

Arrangement of Departments

The third or top floor is used for the warp preparation department and for weaving. The equipment on this floor consists of 48 new Draper automatic looms with Crompton & Knowles head motions, 2 dressing frames, and 2 slashers. The second floor is used for dry finishing and shipping. All the dry finishing equipment was moved from the old building to the new space, allowing better facilities for the wet finishing department which was particularly crowded under the old conditions. No new wet finishing machinery was added. A portion of the second floor is used for preparing goods for shipment.

The first floor of the new building is equipped as a gray goods room, and here the burling, sewing, and mending of goods is done. The three new Woonsocket nappers installed are also set up on this floor. All floors are provided with steel lockers for the workers, made by the Lyon Metallic Manufacturing Co., Aurora, Ill.

Interior View, Uxbridge Worsted Co. Addition

Changes in Old Mill

The greatest change in the old mill, as a result of this addition, has been made in the carding and spinning departments. The dressing frames were formerly located in this room. Removing them from the old building gave more space for yarn manufacturing, and 4 new sets of Cashiko cards with tape condensers, and 8 new mules of Johnson & Bassett make have been installed.

All of the new equipment in the older mill and all machines in the new mill are driven by individual motors. One horsepower motors are being used on the looms, and 7½ h. p. motors on the nappers. The drive on the new cards is the one shown by the Cashiko Machine Co., Inc., in their exhibit at the Boston Textile Show last spring, which attracted considerable attention from practical mill men. Speed reduction is obtained by the use of a worm drive which allows the use of a higher speed standard textile motor, furnished by the Westinghouse Electric & Mfg. Co. Due to the clutch arrangement with the worm drive, a motor with standard starting characteristics can be used.

The pulverized fuel installation in the steam plant, which was put in a year or two ago by the Uxbridge Worsted Co., is adequate to care for the increased power demands and the greater requirements for steam used in heating and processing.

Two Additions at Woonsocket Falls Mill

Six-Story Flat Slab Type Reinforced Concrete Weaving Mill Erected as Addition to Existing Brick and Timber Structure—Two-Story Reinforced Concrete Connecting Building Erected Over Power Canal—Increase of 56,000 Sq. Ft. in Floor Area

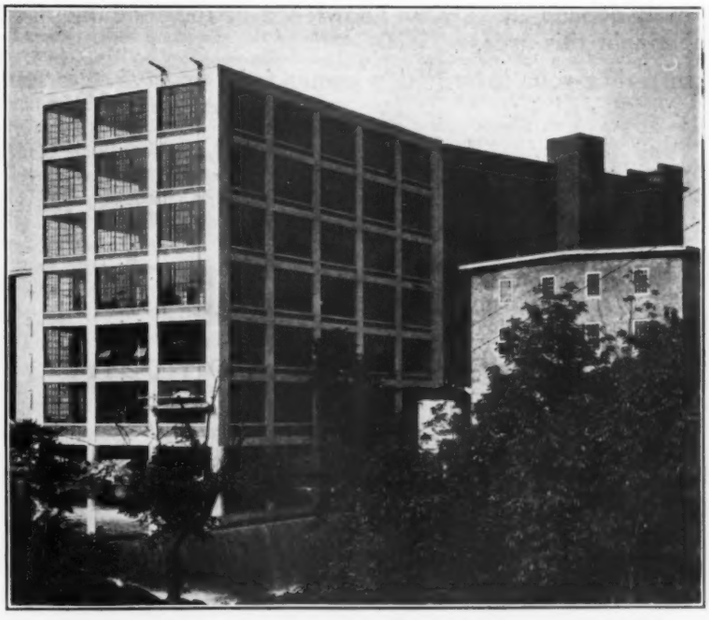
DURING 1926, the Woonsocket Falls Mill, Woonsocket, R. I., manufacturers of plushes, velours, etc., made two large additions to their plant. The first of these is in the form of an extension of an older six-story building, this extension occupying practically the only available land owned by the mill; in fact, one corner of the addition extends into the Blackstone River. Work was started on the foundations in April, 1926, and the building was completed in August. The second addition is a two-story structure which connects with three older buildings and is built over the power canal. Construction work on this was started in July, 1926, and completed about the middle of September.

The six-story structure is approximately 60 x 110 ft., with a total floor area of about 41,000 sq. ft. The building is of reinforced concrete construction with granolithic floors designed to carry 150 lbs. per square foot live load. The design included standard bay spacing of 20 ft. on centers both ways. Story heights are all 13 ft. 4 in. Foundations were carried down to rock and in the case of the piers located in the river, steel jackets were placed around the concrete to prevent erosion. The roofing is a four-ply tar and gravel roof on a flat concrete deck, laid by the Farber Sheet Metal & Roofing Co., Pawtucket, R. I., and guaranteed by them for a period of 10 yrs. The roof connections to rain water leaders are the Holt.

One flight of concrete stairs provided with Feralun treads and pipe rails enclosed in a well with terra cotta walls and fire doors is provided. This stairway is located adjacent to the elevator shaft and gives direct exit to River St. The elevator shaft is enclosed with terra cotta fire walls. It is provided with cast-iron sills and Security elevator doors at each floor, and a loading door with iron guards, etc., at the street.

The sash are structural steel pivoted factory sash furnished by Truscon Steel Co., Youngstown, Ohio. In general the sash are glazed with double thick clear glass, but in certain areas where the fire risk was considerable, wire glass was used. All structural steel, tinned doors, etc., were painted with Bri-mar Steel Guard paint. Woodwork was painted with linseed oil and white lead paint.

The structure is equipped with modern installations of heating, lighting, and plumbing, as well as one elevator of 2-ton capacity. Floor levels match those of the adjoining building and doors connect between the two buildings on every floor. The Bay State Elevator Co., Springfield, Mass., supplied the elevator, which is 8 x 10 ft., and has a speed of 75 ft. per minute. Heating is by means of pipe coils around the walls, steam being supplied from the existing power plant. The Jennison Co., Fitchburg, Mass., were the heating contractors, and also installed a complete sprinkler system including exterior water curtain, as required by insurance companies. This structure is used for weaving, and new equipment largely increases the mill's output.

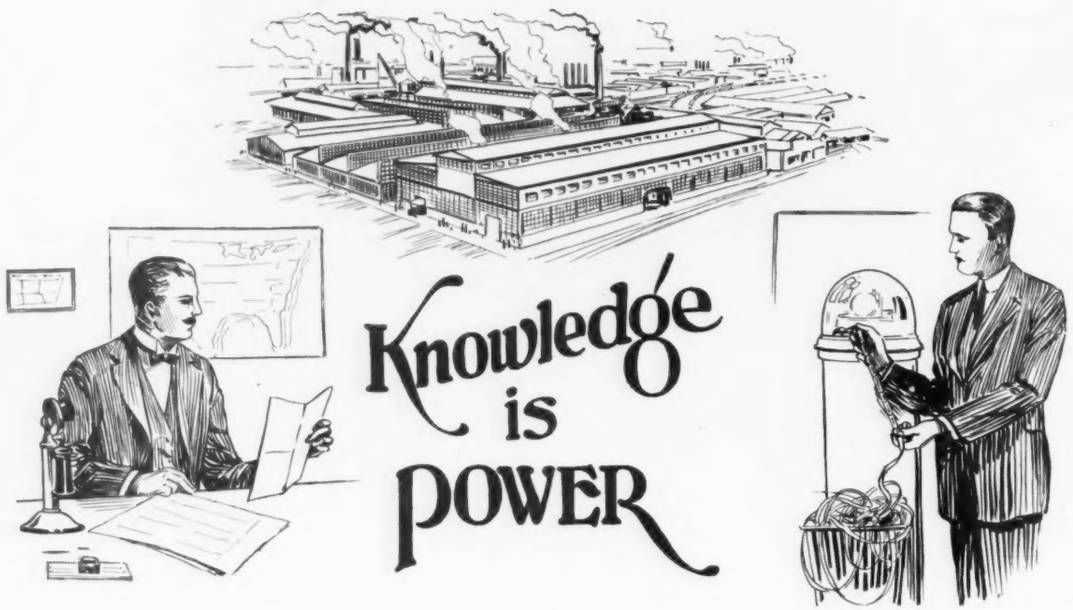


Six-Story Addition to Woonsocket Falls Mill, Woonsocket, R. I.

Build Over Power Canal

Following the completion of the six-story addition, consideration was given to roofing-in the yard space between several buildings of the plant. This idea was finally developed into a fair-sized two-story structure, the greater part of which was constructed over the power canal which runs through the plant and which is known locally as the Woonsocket Trench. Foundations for this structure occurred in part along the canal walls, which were largely replaced by reinforced concrete. These foundations were carried down to ledge and where piers occurred in the canal, steel jackets were used to prevent damage to the concrete.

This two-story structure connects with three older buildings, and was designed with the unusually great story height of 20 ft. in the first story to match existing floor levels. It has a total floor area of about 15,000 sq. ft., with floors designed to carry 150 lbs. live loads. Construction is of re-



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During the last ten years the value of the South's manufactured products increased from less than $4,000,000,000 to more than $10,000,000,000 per annum. There is a great diversity of manufacturing enterprises, ranging all the way from the making of steel rails to the weaving of silk.

A wealth of raw materials, labor, power, transportation and climate combine to offer every advantage for successful manufacturing.

The Seaboard Air Line Railway serves the States of Virginia, North Carolina, South Carolina, Georgia, Alabama and Florida. This territory comprises a true cross-section of the industrial South.

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SAVANNAH, GEORGIA

CLEMENT S. UCKER
Director of Development

WARREN T. WHITE
Acting General Industrial Agent

inforced concrete and is fireproof in every respect. While this structure adjoins other buildings, it is structurally complete and not dependent upon the old buildings.

The roofing is a four-ply tar and gravel roof laid on the flat concrete deck by the Farber Sheet Metal & Roofing Co., and guaranteed by them for a period of 10 yrs. Roof connection to downspouts are Holt connections. Sash are structural steel factory type with pivoted ventilators, and were furnished by the Truscon Steel Co. In general, the sash are glazed with double thick clear glass. The painting in general is the same as for the extension to manufacturing building.

A complete steam heating system was supplied and installed by The Jennison Co. of Fitchburg, Mass., who also installed a complete sprinkler system as required and approved by the insurance companies. An elevator supplied by the Bay State Elevator Co. has been installed which serves both this new addition and one of the older buildings. It has 6 x 8 ft. platform and a capacity of 1 ton. The first floor of this building will be used for drying, and the second floor for packing and shipping.

Both of these additions were designed and constructed by the Aberthaw Co., Boston, Mass., who skillfully utilized all of the space that was available for enlargements. By the erection of these additions, the Woonsocket Falls Mill makes an increase of 56,000 sq. ft. of space in its plant, which provides for an increased output and a better arrangement of departments. The new structures tie in with the older mills and form an efficient manufacturing unit in which lost motion and expense of material handling are reduced to a minimum. The accompanying exterior view of the mill buildings is an interesting study showing the progress that has been made in textile mill construction. At the right is shown the original stone mill; in the center at the rear is shown a later building of timber and brick; and at the left is shown the new six-story concrete mill.

Interior View, Six-Story Addition to Woonsocket Falls Mill

Mill Construction Report

(*Continued from page 379*)

drapery mill, thread mill, winding plant, towel mill, twine mill and a tape mill, which were started up in Massachusetts, New Jersey, Pennsylvania and Rhode Island. Eighteen cotton mills in Pennsylvania enlarged their plants and in Massachusetts and Rhode Island also there was some expansion, eight and ten mills, respectively, having added to their facilities. Construction by the New Bedford (Mass.) Cotton Mills Corp. of an extension to its weave shed and installation of 400 looms was the outstanding project in the North. The Mauzy Mills at Newton, N. J., also made a considerable extension to house 100 jacquard looms.

New Woolen Mills

The nine new woolen mills established were located in California, Maine, Massachusetts, New Jersey, New York, Pennsylvania and Rhode Island, the most important being the new Ohio Carpet Co., established at West Warren, Mass. Various expansion programs were carried out in many plants, among the largest of which were the additions to the plants of the Olson Rug Co., Chicago, Ill., Limerick (Me.) Mills, Uxbridge (Mass.) Worsted Co. and American Hair Felt Co., Newark, N. J.

Knitting Mills

New knitting mills, which numbered 52, although a falling off of 32 from last year's total of 84 new mills, still enabled the knitting industry to maintain its leadership in new projects. The starting of a new silk hosiery mill at Hermosa Beach, Cal., was an interesting development for that section. Pennsylvania, with a total of 23 led in the number of new mills started, the majority of which were full fashioned hosiery plants.

Among the important new units built by well known companies were those of the Nolde & Horst Co., at Womelsdorf, Pa., Newnan (Ga.) Hosiery Mills, Real Silk Hosiery Mills, Indianapolis, Ind., Gotham Silk Hosiery Co., Philadelphia, Lewis E. Taubel, Inc., Red Hill, Pa., Fedden Bros., Inc., Shillington, Pa., Davenport Hosiery Mills, Chattanooga, Tenn., and Chas. H. Bacon Co., Lenior City, Tenn.

Silk Industry

The silk industry very nearly held its own in 1926 when 37 new mills were started, the previous year having only one more plant to its credit. The Hermosa Silk Spinning Corp., Hermosa Beach, Cal., Seaboard Silk Mills, Elberton, Ga., Worcester (Mass.) Silk Mills Corp., General Spun Silk Corp., Watervliet, N. Y., Mohawk Silk Throwing Co., Allentown, Pa., were among the most important new mills. The installation of 12,000 spindles and 144 looms by the Old Colony Silk Mills Corp., New Bedford, Mass., was also a high light of silk progress.

Rayon Plants

In the rayon branch the biggest projects were those carried on by established firms, including American Cellulose & Chemical Mfg. Co., Amcelle, Md., Belamose Corp., Rocky Hill, Conn., Du Pont Rayon Co., Buffalo, N. Y., and Old Hickory, Tenn., Viscose Co., Lewiston, Pa., Roanoke, Va. and Parkersburg, W. Va. The American Bemberg Corp. completed its plant at Bemberg, near Johnson City, Tenn., aand Cupra, Inc. finished and started operation of the first unit of its plant at Clifton, N. J. Important also was the formation of the Delaware Rayon Co. at New Castle, Del., where they acquired buildings, erected additions and started the installation of machinery.

Miscellaneous Mills

The group classified as miscellaneous made a fair showing of new plants started, the total of 38 being divided as follows: Twenty-four dyeing, bleaching and finishing plants, three braid mills, two cordage mills, two wool batt plants, a linen mill, asbestos yarn and cloth mill, wadding plant, insulating yarn mill, jute yarn mill, hooked rug plant and a converting and backwinding plant. The new Dodgeville Finishing Co's. project at Dodgeville, Mass., where they started the establishment of a plant to have a capacity of 500,000 yds. per week, is noteworthy, as is also the Oregon Linen Mills construction of a new mill at Salem, Ore., and the building of a new plant by the Holliston Mills of Tenn., at Kingsport.

Following are detailed reports of new mills, enlargements and improvements:

Detailed Report of New Mills

NEW COTTON MILLS

Alabama, Albany. Connecticut Mills Co.; lease plant still to be erected; three-story, 240 x 140 ft.; 32,000 spindles to be transferred from company's Globe Yarn Dept., Fall River, Mass., and twisting and weaving machinery from Connecticut Mills, Danielson, Conn.

Gadsden. Sauquoit Spinning Co.; erect new plant; transfer 20,000 spindles there from Capron, N. Y.; main building two stories, 104 x 400 ft., with wing 50 x 80 ft.; also four one-story structures, 50 x 100 ft.

Arkansas, Morrillton. Morris & Co., Inc.; start construction of one-story, 410 x 156 ft. plant; will transfer 10,000 spindles and 42 looms from Groveville, N. J.

California, Arcadia. Padre Textile Mfg. Co.; capitalized at $20,000; erect mill and start manufacturing with 6 looms, 1 winder, 1 dresser, 1 quiller.

Georgia, Columbus. Lovelace Bros.; lease space and begin producing narrow fabrics; 4 looms.

Gainesville. Chicopee Mfg. Corp. (Chicopee Falls, Mass.); purchase land and plan construction of new mill and village of 400 houses.

Newnan. Arnco Mills; erect plant for cotton and cotton and wool blankets; 10,000 spindles, 160 looms.

Savannah. Yamacraw Yarn Mills; start production of cotton yarns with 3,000 mule spindles.

Thomaston. Martha Mills; new tire fabric plant; three-story, 460 x 160 ft.; 30,000 spindles.

Kentucky, Lawrenceburg. Dean & Sherk Corp.; erect mill having 40,000 sq. ft. of floor space; transfer equipment from Detroit to new building.

Louisiana, Shreveport. L. H. Gilmer Co. (Philadelphia, Pa.); establish branch plant of 5,000 spindles and 36 looms; main building, 150 x 400 ft.

Massachusetts, Gardner. Gardner Fibre Co.; incorporated for $100,000; start manufacturing webbing and braids; 2 twisters, 8 looms, 4 braiding machines.

New Jersey, Medford. Medford Textile Mills, Inc., organize and begin making damask draperies.

Newark. Bruck Thread Co.; start operations at 68 Springfield Ave.

West New York. Excellent Yarn Co.; capitalized at $100,000; lease space and install winding machines.

North Carolina, Burlington. Alamance Novelty Mills; start construction of new weaving mill to be equipped with about 100 looms.

Burlington. Holt, Love & Holt; new firm; construct one-story, 75 x 125 ft. plant; equip with 50 81-in. looms.

Cherryville. Nuway Spinning Co.; organize and acquire plant of Vivian Spinning Co.; sell old equipment and install 5,000 new spindles for fine combed yarns.

Ellenboro. Ellenboro Mfg. Co.; install 2,500 spindles for initial operations; later add 30 looms for making bedspreads; also slasher and cloth room machinery.

Newton. Warlick Mfg. Co.; construct plant for novelty dress goods; 100 looms.

Roseboro. Roseboro Mills, Inc.; erect 100 x 280 ft. mill; equip with 5,000 ring spindles; houses for operatives.

Saluda. Saluda Towel Mills; form with capital of $100,000; install 60 looms for part linen towels and toweling.

Pennsylvania, Philadelphia. Kimberly Mills Corp.; capitalized at $100,000; begin producing automobile interior cloth with 40 looms.

Philadelphia. Quaker Towel Mills; organize and begin producing towels at Mascher & York Sts.

Philadelphia. Schuylkill Plush Co.; capitalized at $25,000; start making cotton plushes at Main and Harvey Sts., Manayunk.

Rhode Island, Pawtucket. P. F. Hesse Narrow Fabric Co.; new company; lease space at 381 N. Main St.; install 7 tape looms, winding and warping machinery.

Providence. Pilgrim Plush Co.; incorporated for $200,000; start weaving and finishing cotton, worsted and mohair pile fabrics.

South Carolina, Anderson. Ladiassie Mills; capitalized at $200,000; erect 1½-story, 107 x 275 ft., plant and install 300 36-in. looms.

Gaffney. Vogue Mills; start producing cotton and rayon bedspreads, equipped with 90 jacquard looms.

Tennessee, Nashville. Thomas Henry & Sons, Inc.; construct new plant, having 110,000 sq. ft. floor space; transfer machinery from Philadelphia; 20,000 spindles, 130 looms.

Virginia, Waynesboro. Crompton (R. I.) purchase 27 acres of land and erect new plant; 100,000 sq. ft. floor space.

Canada, Welland, Ont. Dominion Yarns, Ltd.; incorporated for $150,000; purchase plant built for Welland Cotton Mills but never operated; start manufacturing with 5,000 spindles.

Sherbrooke, Que. Samson Cordage Works (Boston, Mass.); establish branch plant in leased quarters.

NEW WOOL MILLS

California, Oakland. Wilbur Woolen Works; build two-story, 50 x 300 ft. mill for cotton and wool batts and blankets; 1,200 spindles, 24 looms.

Maine, Lewiston. Bower Mill; lease plant formerly occupied by Avon Mills Co.; equip with 2 sets, 2 pickers, 24 92-in. looms for woolen blankets.

Massachusetts, West Warren. Ohio Carpet Co.; capitalized at $100,000; purchase Mill No. 4 of Thorndike Co.; install 4 mules, 7 sets cards, 30 looms.

Worcester. Clark Wool Co.; organize with capital of $25,000; begin producing ladies' wear woolens; 12 broad looms.

New Jersey, Clayton. Clayton Woolen Mills, Inc.; equip plant with 6 pickers, 3 cards, 3 garnetts, for producing reworked wool.

New York, Seneca Falls. Seneca Rug Co.;

Industrial and Financial Leaders Speak for Georgia

Manufacturers will accept—at face value—the unanimous opinion of authorities such as cited below, upon industrial conditions of a section of the country—which these men have personally inspected.

Following are excerpts from letters written by individual members of a group of industrial financiers from the North, who recently returned from a personal visit of inspection to Georgia and Alabama.

PARIS B. RUSSELL, National Bank of Commerce, New York: "You have great natural resources for the development of industry. Up to now there has been a remarkable growth in industrial enterprises in your section and this growth has been hand in hand with the growth of power facilities."

R. L. CERERO, of National Park Bank, New York: "My strongest impression is unquestionably the part that water power development now plays and should continue to play in the progress and prosperity of your Southern States. I have not overlooked your favorable labor conditions, which were brought to my attention wherever I went."

FREDERICK S. BALE, Bankers' Trust Company, New York: "To one who has been visiting the South at least annually for about 15 years, the steady increase in material resources has been apparent. However, the industrial development in particular which has taken place in the last half dozen years is one of the most outstanding accomplishments in the industrial history of our country."

SIDNEY W. NOYES, New York Trust Company: "The sleepy South seems to have become very much awake. The cities we visited looked alive and the men alert. The water powers on the Coosa and Tallapoosa Rivers were particularly impressive, and I hope to see the Gorgas plant so as to more or less complete the picture in my mind."

C. E. GROSBECK, Electric Bond & Share Company, New York: "It was a privilege to see the great hydro-electric plants. . . . Since my return I have run onto a number of the members of the party and all are more enthusiastic about the properties and the future prospects, and are loud in their praises."

C. W. HUNTER, of U. G. I. Contracting Company, Philadelphia: "The industrial progress of Georgia and Alabama is growing at a rate very much greater than I anticipated. . . With cheap power and natural resources it would seem the situation is hard to beat."

J. F. MacCLELLAND, New York Trust Company: "It was most instructive and I came away with the feeling that I had learned a lot and had seen a really big enterprise at a most interesting stage in its development."

WILLIAM GAGE GRADY, JR., National City Bank, New York: "With the rapid development of the South, which is sure to take place in the next few years, I believe the task of expansion will become greater each year."

ROBERT HAYDOCK, of Tucker, Anthony & Company, New York: "It seems to me that these sections have all the requisites for sound industrial growth; natural resources, a favorable climate, an abundant supply of American-born, low living cost, improved railroad and shipping facilities and an ample supply of power."

WILLIAM H. PUTNAM, of Putnam & Company, Hartford, Conn.: "I think I was most impressed with the people in these states. They seem to be under such personal discipline and to have a tremendous energy and determination to improve themselves. So much so I believe the territory offers unusual opportunities."

G. W. CURRAN, of United Gas & Improvement Company, Philadelphia: "What I saw and heard of that portion of the South which I visited impressed me very favorably. The talks I had with some of the leading business men convinced me that that section is rapidly changing from an agricultural to an industrial one."

ROLLIN P. GRANT, of Irving Bank & Trust Company, New York: "The conclusions which seemed to be unanimous with the party at the end of the trip were most favorable to the possibilities of the sections visited. Clearly the Southeastern part of the United States is coming and will continue to come fast."

GEORGE N. TIDD, of American Gas & Electric Company, New York: "An empire with a matchless climate and great natural resources, traversed by high tension power lines, vitalized by power from its many rivers, combined with a plentiful supply of 100 per cent American labor, can not but surely bring about the balance of industry and agriculture which makes for health, happiness and prosperity for all."

H. M. ADDINSELL, of Harris, Forbes & Company, New York: "When one considers the industrial development that was achieved by such states as Massachusetts without raw materials, where in the early days factories had to be located near mechanical water powers, one realizes the opportunity that lies before this section with its great water powers, its great coal fields and other natural resources, and its network of transmission lines which make it possible for factories to be located at strategic points."

S. A. MITCHELL, of Bonbright & Company, New York: "With dependable power at reasonable rates, unusually good water and rail connections, coal and iron deposits, climatic and geographical advantages, and an American population, Alabama and Georgia should be leaders in the industrial development of the South."

F. P. LINDH, of Bonbright & Company, New York: "After our visit to the Southeastern States, I returned more enthusiastic about the great expansion that is taking place there. Not only have you material requisite for continued industrial development, but, in addition, I feel the people of the South have the will to progress, and with this combination there is no limit to their advancement."

HARRY H. BEMIS, of Curtis & Sanger, Boston: "The promise of future growth in the industrial development of the country is bright and would seem to rest on sound foundations."

We invite correspondence from manufacturers interested in a location offering low power rates, low taxes, favorable labor conditions, and a climate without extremes of heat or cold.

There are many excellent reasons why manufacturers are turning to Georgia.

GEORGIA RAILWAY AND POWER CO.

ATLANTA

New York Office: 120 Broadway.

lease space and install 10 looms for chenille rugs.

Pennsylvania, Philadelphia. Frank Lund; start spinning worsted yarns in leased quarters in Manayunk; 1,000 spindles.

Clifton Heights. Stewart Yarn Mills; install 2,660 twisting spindles in plant formerly occupied by Linenwear Hosiery Co.

Rhode Island, Pawtucket. Lexington Looms, Inc.; lease two-story building and install 14 looms for woolens and worsteds.

NEW KNITTING MILLS

Alabama, Florence. Gardiner & Warring Co.; start construction of new plant; three-story, 60 x 280 ft.; will move equipment from Amsterdam, N. Y.

California, Hermosa Beach. Hermosa Hosiery Mills, Inc.; begin production of ladies' silk hosiery; 12 loopers, 16 circular and 12 f. f. machines.

Oakland. Wurm Woven Hosiery Mills; start operations equipped with 12 latch needle machines, 3 ribbers, 2 loopers, 2 sewing machines.

Florida, Tampa. Tampa Knitting Mills; equip plant with 19 latch needle and 36 sewing machines for misses' and children's underwear.

Georgia, Acworth. Unique Knitting Co. (Philadelphia); construct new branch plant; two-story, 165 x 65 ft., at Acworth.

Carrollton. Lawler Hosiery Mills; start production of infants' socks with initial equipment of 10 knitting machines.

Illinois, Chicago. Climax Knitting Mills, Inc.; organize with capital of $12,500; install 15 knitting, 8 sewing machines, etc.

Indiana, Fort Wayne. General Hosiery Co.; erect new mill, one-story, 90 x 165 ft.; also dyehouse and boiler house; 19 knitting machines, 5 loopers, 6 sewing machines.

Maryland, Cumberland. Cumberland Hosiery Co.; lease building and equip with 2 loopers, 10 circular knitting and 2 sewing machines.

Massachusetts, Holyoke. Lynch Knitting Co.; start producing ladies' rayon underwear with 1 knitting and 6 sewing machines.

New York, Clinton. Kirkland Knitting Co.; lease space and begin manufacturing sweaters.

College Point. Elkind Knitting Mills, Inc.; start making rayon, worsted and silk knitted fabrics in leased plant.

New York. Stylart Knitting Mills, Inc.; incorporated for $30,000; begin producing sweaters at 202 Green St.

Utica. Utica Underwear Co.; lease space and install new machinery for men's union suits.

North Carolina, Asheboro. Cranford Hosiery Mills; acquire two-story building and equip for producing 200-needle mercerized hosiery.

Burlington. Flint Hosiery Co., Inc.; lease space and install 37 latch needle knitting machines, 7 ribbers, 9 loopers.

Burlington. Perfection Hosiery Mills, Inc.; organize and start operations equipped with 85 latch needle knitting machines, 15 ribbers, 24 loopers, 1 sewing machine.

Greensboro. Carolina Silk Products Corp.; begin construction of two-story, 100 x 100 ft. plant to house about 48 f. f. machines.

Henderson. McKinney Hosiery Co.; begin operations with 75 machines; seamless half hose.

Roxboro. Person Hosiery Mill; lease loft and start manufacturing ladies' 260-needle hose; 15 circular knitting machines, 2 loopers.

Tryon. Wear Knitting Co.; purchase machinery of Robesonia (Pa.) Knitting Mills, also other machinery, making total of 240 latch needle knitting machines, 28 loopers, 6 sewing machines.

Pennsylvania, Philadelphia. Alanna Knitting Co.; start producing ladies' f. f. hosiery at Frankford; initial equipment, 1 set.

Philadelphia. Majestic Hosiery Co.; erect new mill and begin operations with 14 f. f. machines.

Philadelphia. Monroe Hosiery Mills; build new plant, 100 x 125 ft.; equip with 12 f. f. machines.

Philadelphia. Olympia Full Fashioned Silk Hosiery Co.; construct new mill; two-story, 100 x 45 ft.; 12 f. f. machines.

Philadelphia. Alexander Seifert, Inc., organize and start producing sweaters, etc., at 12th and Brown Sts.; 12 knitting machines.

Philadelphia. Sunrise Knitting Mills; build f. f. hosiery mill at Tacony.

Philadelphia. Weber & Friedrich; start making ladies' f. f. hosiery in leased quarters; 16 knitting machines.

Philadelphia. Whitehall Knitting Co.; begin construction of new hosiery mill to cost $50,000; 14 f. f. machines.

Bethayres. Bethayres Knitting Mills; capitalized at $20,000; start operations.

Cheltenham. Danneman & Kuehnert Hosiery Co.; build new plant; about 12 f. f. machines for initial operations.

Croydon. Largman, Gray Co.; erect new plant; main building, two-story, 90 x 300 ft.; dye and boiler house, 50 x 300 ft.; initial equipment 50 f. f. machines, 10 loopers, 10 sewing machines.

Duncannon. Duncannon Hosiery Mills; new branch mill started by E. O. Smith; 8 ribbers, 8 loopers, 50 circular knitting machines.

Lebanon. Lebanon Mills, Inc.; erect new hosiery mill costing about $35,000, without equipment; 90 x 113 ft.; 9 f. f. machines, 2 loopers, 3 sewing machines.

Lewisport. Ontelaunee Knitting Mills; incorporated for $100,000; start producing bathing suits; 40 knitting machines.

Pottstown. Iris Knitting Corp.; begin manufacture of ladies' rayon underwear, equipped with 5 winders, 10 knitting, 30 sewing machines.

Quakertown. Tohicken Hosiery Co., Inc.; build new mill; initial equipment, 4 f. f. machines.

Reading. Reading Full Fashioned Hosiery Mills, Inc.; organize and start operations; 2 sets 24-section machines, seamers, loopers, etc.

Reading. Traymore Hosiery Co.; capitalized at $100,000; begin making ladies' f. f. silk hosiery; 6 20-section knitting machines.

Richland. Richland Knitting Mills; buy building and equip for manufacturing men's sweaters.

Southampton. Richter Knitting Mills; purchase land and start building one-story, 60 x 100 ft. mill; initial equipment 8 24-section f. f. machines.

Stroudsburg. Monroe Hosiery Mills; erect mill and equip with 12 f. f. machines.

Womelsdorf. Nolde & Horst Co. (Reading, Pa.); erect branch plant; main building one-story, 115 x 300 ft.; 60 new f. f. machines for initial operations.

York. White Rose Textile Corp.; form with capital of $25,000; equip plant with 30 knitting machines, 18 ribbers, 5 loopers, 1 sewing machine for infants' socks.

Tennessee, Bristol. High Rock Knitting Co. (Philmont, N. Y.); start construction of branch plant.

Texas, Houston. Houston Hosiery Mills; incorporated for $25,500; lease quarters and equip with 14 latch needle knitting machines, 4 ribbers, 5 loopers.

Houston. Paramount Hosiery Mills of Texas; install 2 knitting machines, 1 looper, 1 sewing machine in leased space.

Virginia, Bassett. Bassett Knitting Mills; build two-story, 80 x 160 ft. plant; equip for men's knit underwear.

Bristol. Artus Knitting Mills; lease plant at Bristol and transfer 40 knitting machines from plant recently established at Philadelphia.

Wytheville. Inspiration Hosiery Mills; erect new mill; one-story, 150 x 50 ft.; equip for infants' hosiery.

Canada, St. Catharines, Ont. L. O. Hudson Co., Ltd.; organize and buy one-story, 225 x 65 ft. building; install machinery for f. f. hosiery.

Toronto, Ont. Beaunit Mills, Ltd. (branch of Beaunit Mills, Inc., Brooklyn, N. Y.); lease 10,000 sq. ft. space; equip with 20 spring needle knitting machines for rayon fabrics.

NEW SILK MILLS

California, Hermosa Beach. Hermosa Silk Spinning Corp.; capitalized at $100,000; install 2,000 spindles for initial operations.

Georgia, Elberton. Seaboard Silk Mills; construct new plant and village; main building two-story, 70 x 370 ft.

Massachusetts, Becket. Smith Silk Co.; purchase plant and start manufacturing silk thread, equipped with 784 spindles.

New Bedford. Premier Silk Mills Corp.; incorporated for $50,000; lease space and install 24 looms.

Worcester. Worcester Silk Mills Corp.; lease former weave room of Mills Belt Co. and install 100 52-in. looms.

New Hampshire, Manchester. United States Silk Mill, Inc.; capitalized at $5,000; start manufacturing silks with 4 looms.

New Jersey, Paterson. Bermar Silk Corp.; form with capital of $125,000; start operations equipped with 28 looms.

Paterson. Clayton Silk Mills, Inc.; incorporate for $100,000; start producing novelties; 500 spindles, 120 looms.

Paterson. Diana Broad Silk Mills; begin making broad silks in leased quarters, equipped with 32 looms, 3 winders, 1 warper.

Paterson. H. W. Silk Co., Inc.; organize with capital of $50,000; install 12 looms for tie silks.

Paterson. Kahn Textile Co.; start manufacturing broad silks at 99 Cliff St., with 38 looms.

Paterson. Lafayette Broad Silk Co., Inc.; incorporate for $125,000; start operations.

Paterson. Lyons Silk Co.; organize and begin producing with 32 looms.

Paterson. Marlin Thrown Silk Corp.; incorporate for $125,000; establish silk throwing plant.

Paterson. May Silk Co., Inc.; start operations equipped with 160 spindles, 24 looms.

Paterson. New Jersey Silk Corp.; incorporate for $125,000; install 36 looms for initial operations.

Paterson. Rosebud Silk Mills; new company; equip plant with 12 52 and 54-in. looms.

Summit. Moon Silk Mfg. Co.; lease space and install 20 looms for broad silk production.

New York, Binghamton. Binghamton Silk Mfg. Co.; capitalized at $10,000; lease quarters; equip with 30 looms, 2 warpers, 2 winders.

Watervliet. General Spun Silk Corp.; lease 30,000 sq. ft. space and install 3,000 spindles.

Pennsylvania, Allentown. Mohawk Silk Throwing Co.; start operations equipped with 6,000 spindles.

Allentown. Saks Silk Co.; capitalized at $32,000; begin producing with 30 box looms, 2 warpers, 3 winders.

Bloomsburg. S. & S. Silk Co.; organize with $25,000 capital; establish commission silk throwing plant.

Emaus. Greigetex Silk Corp.; new firm; install 32 box looms in leased quarters.

Lehighton. Lehigh Silk Mfg. Co.; organize and install machinery preparatory to starting operations.

McClure. McClure Silk Mfg. Co.; begin production of satin lining in leased quarters; 4 warpers, 4 winders, 50 looms.

Millheim. Millheim Spinning Mill Co.; organize with $115,000 capital; start silk throwing plant.

Mount Joy. George Brown's Sons, Inc.; install 40 silk looms.

Pottstown. Montgomery Silk Mills, Inc.; begin manufacture of broad silks; 30 looms, 1 winder, 1 warper.

Selinsgrove. Selinsgrove Silk Mfg. Co.; organize and start making broad silks, equipped with 240 spindles, 40 looms.

Stroudsburg. A. R. K. Silk Mills; lease quarters and install 20 ribbon looms.

Stroudsburg. Krag Silk Co.; incorporated for $25,000; start producing ribbons in leased quarters, equipped with 28 looms.

Wilkes Barre. Wilkes Barre Weaving Co.; organize with capital of $50,000; rent plant of Wilkes Barre Silk Co.; install 120 broad silk looms.

York. Radio Silk Co.; lease space in C. C. Jacobs Bldg.; equip with 20 looms.

Rhode Island, Pawtucket. Rhody Mills, Inc.; lease part of former Goff mills; install 30 60-in. and 4 44-in. box looms for silk, rayon and silk and cotton goods.

Virginia, Buena Vista. Buena Vista Textile Corp.; incorporate for $10,000; lease plant of Buena Vista Throwing Co. and install 52 looms, 4 warpers.

Canada, Montreal, Que. British American Silk Mills, Ltd.; lease space and equip with 20 52-in. looms.

NEW RAYON MILLS

Connecticut, Putnam. Cargill Textile Co.; lease space and start rayon copping and winding.

Delaware, New Castle. Delaware Rayon Co.; purchase former shell-loading plant; remodel and install machinery for first unit, 2,500 lbs. of rayon per day; start construction of a two-story building and five one-story buildings to cost about $300,000.

Louisiana, Lake Charles. Massasoit Mfg. Co. (Fall River, Mass.); build new unit for producing cellulose from rice hulls for making rayon; cost $200,000.

Massachusetts, Easthampton. Hampton Co.; install machinery for production of rayon.

New Jersey, Paterson. Newtex Silk Co.; build new plant and start making rayon fabrics with 40 looms.

Paterson. Rosland Rayon Corp.; organize and begin operations on small scale; will expand later.

Pennsylvania, Norristown. Malina Co. (New York); establish branch plant at Norristown, for winding, coning, copping and twisting rayon.

Canada, Drummondville, Que. Canadian Celanese, Ltd.; start construction of new plant to cost approximately $7,200,000.

NEW MISCELLANEOUS MILLS

California, Los Angeles. Pacific Textile Corp.; erect one-story dyehouse and two-story office and mill building; start dyeing, bleaching and finishing yarns and fabrics.

San Bernardino. Cordage Fiber Co., Inc.; capitalized at $200,000; build new plant.

San Francisco. Maypole Dye Works; capitalized at $60,000; lease space and install 5 yarn dyeing, 2 piece dyeing machines.

Connecticut, Shelton. Harvey Textile Co.; begin production of elastic braids equipped with 300 braiders.

Colorado, Denver. National Wool Bedding Co.; capitalized at $100,000; start manufacture of wool batts, comforts and pillows in leased quarters.

Georgia, Columbus. Roberts Braiding Co.; install 5 machines for making shoe laces and braids.

Illinois, Chicago. Fibre Dyeing Co.; capitalized at $10,000; lease space and install spool winding and coning equipment.

Cicero. Union Asbestos & Rubber Co.; form with capital of $450,000; start manufacture of asbestos yarn and cloth.

Maine, Portland. New England Guild; begin making hooked rugs with 30 hooking machines.

Massachusetts, Dodgeville. Dodgeville Finishing Co.; purchase Dodgeville Mills, formerly operated by B. B. & R. Knight; remodel and install new machinery for bleachery; capacity 500,000 yds. per week.

Worcester. Standard Wadding Co., Inc.; incorporated for $25,000; lease space and begin producing wadding; 10 cards, 3 pickers, 2 lappers, 2 dryers.

Missouri, St. Louis. Central Braiding Co.; establish mill at 4775 Cupples Pl.

New Jersey, Cedar Grove. W. G. Banfield; begin production of insulating yarns.

Farmingdale. Textilart Printing Co.; start printing carpets, upholstery fabrics, wool, silk, cretonnes, etc., in plant having 20,000 sq. ft. of space.

Paterson. Crescent Dyeing & Finishing Co.; capitalized at $125,000; buy plant at 373 N. 11th St. and begin operations.

Paterson. Graerose Piece Dye Works, Inc.; start construction of one-story dyehouse and boiler plant, 40 x 87 ft. and 28 x 48 ft., respectively.

Paterson. North Jersey Dye Works, Inc.; build plant and start dyeing silks.

New York, Lyons. Lyons Wool Batting Co.; install machinery for making wool batting and comfortables in leased space; 1 card.

Pleasant Valley. Valley Finishing Co.; lease space and equip for finishing cotton and cotton and rayon piece goods.

North Carolina, Salisbury. Southern Silk Dye Works; purchase 10 acres of land and start establishment of new plant as branch of Northern Silk Dye Works, Germantown, Pa.

Oregon, Salem. Oregon Linen Mills, Inc.; erect new plant; main building one-story 100 x 300 ft.; also warehouse and power house; 1,200 spindles, 110 looms.

Pennsylvania, Philadelphia. American Hosiery Salvage Corp.; establish silk and rayon converting and backwinding business.

Philadelphia. Diana Silk Mills Co.; start bleaching raw silk at 2601 N. Hancock St.

Philadelphia. Triple H Silk Dyeing Co.; establish new plant; capacity 3,000 lbs. a day.

Hanover. Revonah Spinning Mills; organize and begin production of jute carpet yarns with 1,100 spindles.

Milton. Milton Silk Dyeing Co.; start erection of one-story dyeing plant, to cost in excess of $1,000,000, including equipment.

Royersford. Roth & Greer, Inc.; incorporated for $20,000; purchase building, remodel and install equipment for dyeing and bleaching.

York. York Bleachery & Dye Works; lease space and equip for dyeing and bleaching skein goods and hosiery.

Rhode Island, Central Falls. Thies Dyeing & Processing Co.; incorporated for $50,000; establish new plant with capacity of 30,000 lbs. per week.

Hope Valley. Hope Valley Processing Co., Inc.; organize with capital of $50,000; acquire plant and start dyeing and bleaching.

Pawtucket. Colonial Processing Co.; capitalized at $300,000; start operations in former plant of John West Thread Co.

Pawtucket. Cooley Finishing Co.; lease space and start operations; capacity 25,000 yds. per week.

Providence. Franklin Rayon Dyeing Co.; new corporation affiliated with Franklin Process Co.; purchase, remodel and re-equip George E. Boyden plant, 86 Crary St.

Providence. Leomar Processing Corp.; install machinery for winding and dyeing rayon and cotton yarns; later build one-story addition and equip as bleachery.

Tarkiln. Clearwater Dyeing & Finishing Co.; lease plant formerly operated by Bragg Woolen Mills, Inc.; equip for dyeing and finishing.

Tennessee, Kingsport. Holliston Mills of Tenn., Inc.; construct new two-story plant for book cloths; dye, bleach and finish only.

Canada, Portage la Prairie, Man. Manitoba Cordage Co.; organize with capital of $300,000; acquire building and install machinery for making commercial twines.

Woodbridge, Ont. W. Robinson & Son Converters, Ltd. (Toronto); erect 170 x 140 ft. dyeing plant.

Enlargements and Improvements

COTTON

Alabama, Alexander City. Russell Mfg. Co., Inc.; build 124 x 300 ft. addition to house 314 looms for pajama checks, etc.

Anniston. American Net & Twine Co.; construct new boiler house and pump room at cost of about $12,000.

Anniston. Anniston Mfg. Co.; install 100 additional high speed looms.

Athens. Wellman Cotton Mills Co.; install 36 deliveries drawing; also winder for double carding.

Birmingham. Strowd-Holcombe Cotton Mill, Inc.; complete remodeling and installation of 8,388 spindles and 248 looms as planned last year; build new storehouse.

Eufaula. Eufaula Cotton Mills; take over Marcella Cotton Mills, overhaul, and install new machinery.

Florence. Cherry Cotton Mills; install raw products dye plant at cost of $27,000.

Huntsville. Lincoln Mills of Alabama; erect three-story office building.

Huntsville. Lowe Mfg. Co.; build two-story extension for beaming and slashing departments.

Langdale. West Point Mfg. Co.; construct saw-tooth weave shed, 325 x 123 ft., to house 350 additional looms.

Mobile. Cotton Mills Products Co.; expend approximately $20,000 for improvements to Mill No. 5, including installation of 74 additional looms.

Montgomery. E. J. Hesslein and associates, New York, purchase Autauga Cotton Mills, Prattville, Ala., and controlling interest in Montala Mfg. Co., Montgomery; install 24 additional looms in Montala plant.

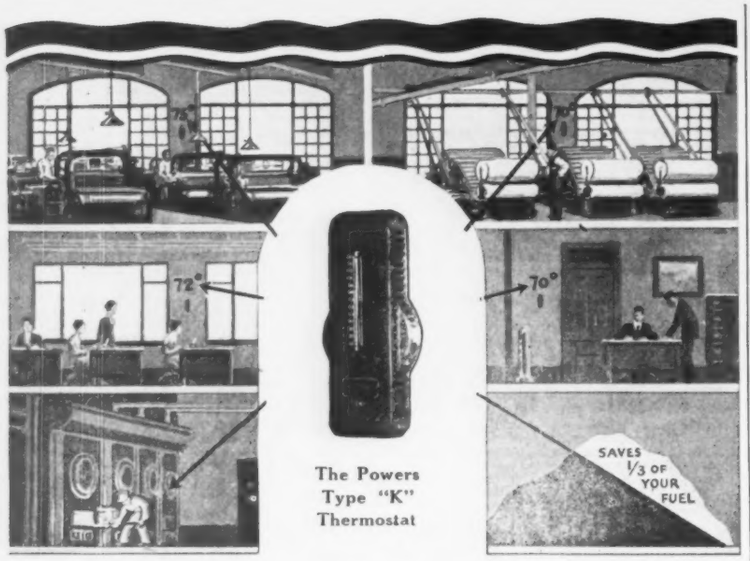
Sycamore. Sycamore Mills; install 8 new long draft spinning frames.

Tallassee. Tallassee Mills; add 124 looms to equipment.

Arkansas, Monticello. Monticello Cotton Mills Co.; build one-story, 138 x 162 ft. extension; add 2,500 spindles and 70 looms; also improve old mill building at cost of $30,000.

Connecticut, Jewett City. Ashland Cotton Co.; install 442 new type sliding feelers, 4 winders, 1 silk slasher, 1 quiller.

Killingly. Powdrell & Alexander, Inc., and Paco Mfg. Co. consolidate under name Powdrell & Alexander, Inc.; purchase plants of Attawaugan Co., Ballouville and Killingly; transfer machinery from Put-



The Powers Type "K" Thermostat

Keeps Each Department at the Right Temperature

Proper control of temperature and humidity in textile mills through personal attention is almost impossible. So called manual control really means an unwarranted, expensive, and costly neglect. It means loss of time in fussing with windows and valves, a loss of time necessary to stop and repair yarn breakage, as well as loss from other damages in carding, spinning, or weaving in variable temperatures and humidity. These losses, or added costs of production, do not really stop in the mill, for an inferior product results in loss of customers' good will—and business.

For the best results, cotton carding requires conditions as near 70° F. and 50% relative humidity as possible. Cotton spinning requires conditions as near 80° F. and 65% relative humidity as possible. Cotton weaving requires conditions as near 75° F. and 75% relative humidity as possible. Other textile products require equally meticulous adjustment and control that is impossible in any other way except through proper automatic control.

Powers Automatic Temperature Control will pay for itself in a short time—in many ways.

Our new 52-page book "Shop and Office Temperature" contains an abundance of interesting facts and evidence, test data, graphic charts, etc., showing: 1. Ideal temperature for mill and office; 2. How proper room temperature increases output of workers; 3. Effect of room temperature on health of workers; 4. How accidents increase in overheated rooms; 5. How ACCURATE temperature control reduces fuel consumption 15 to 48%.

Upon request, we shall be glad to send this book free to executives interested in eliminating waste and increasing the profits of their firm. No obligation. Write today for your copy.

See also CONSOLIDATED TEXTILE CATALOG

THE POWERS REGULATOR COMPANY

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380RA

We say "Balanced textile territory." As a mill man, weigh these ingredients and judge for yourself—

1. A location within quick reach of major markets — New York City overnight, for instance. Deep water ocean terminal in Newport News, Virginia.
2. A favorable year-around climate.
3. Satisfied, native-born labor. No labor unions or unfavorable laws.
4. Raw material close at hand. Cotton nearby. Rayon available.
5. Cheap and abundant hydro-electric power.
6. Coal close at hand.
7. Citizens willing to cooperate.

The Chesapeake & Ohio Railway lines offer dependable, through rail service from Virginia to the Great Lakes with terminal points at Newport News, Norfolk, Toledo and Chicago.

Study the textile situation in Virginia — is is decidedly favorable. Amortization plans are available. Let us supply you with complete data. Inquiries will be treated as strictly confidential.

K. T. CRAWLEY, *Manager*

AGRICULTURAL AND INDUSTRIAL DEPARTMENT

THE CHESAPEAKE AND OHIO RAILWAY COMPANY

RICHMOND, VA.

nam to newly acquired mills where also add some new machinery; install 100 sewing machines for making curtains, 56 looms and additional machinery in bleachery of Paco plant.

Middletown. Russell Mfg. Co.; build 36 x 124 ft. addition for brake lining manufacture; also another webb treating plant, 37 x 125 ft.

Mystic. National Braided Thread Co.; incorporate for $750,000; purchase machinery of Braided Thread Corp., overhaul and start up; plan to add machinery for making shoe and corset laces.

Georgia, Athens. Clark Cotton Mills; organize and acquire plant of Bowen-Crews Co.; plan improvements.

Banning. Banning Cotton Mills; install additional twisting equipment, 6 spinning frames and 2 spoolers.

Cedartown. Goodyear Clearwater Mills, Inc.; purchase Paragon Mill of Cedartown Cotton & Export Co.; build two-story, 140 x 500 ft. and 250 x 150 ft. mill additions, 100 x 100 ft. warehouse, and 100 houses for operatives; transfer 18,000 spindles earlier purchased from Essex Mills, Passaic, N. J., to Cedartown; add 6,300 new twister spindles and 10 looms.

Columbus. Muscogee Mfg. Co.; construct Mill No. 6; L-shaped, 193 x 115 ft. and 108 x 54 ft., five stories high; install 308 new looms.

Eastman. Eastman Cotton Mills; build one-story, 125 x 380 ft. extension to house 10,000 additional spindles.

Elberton. Elberton Cotton Mills; purchase Hamilton Carhartt Cotton Mills No. 3; make repairs and start operations.

La Grange. Hillside Cotton Mills; extend plant; install additional looms and new equipment in opening room.

La Grange. Unity Spinning Mill; construct one-story, 132 x 217 ft. addition to house 10,000 new spindles for coarse yarns; also build additional warehouses and number of dwellings.

La Grange. Valley Mills; complete two-story, 80 x 250 ft. addition started last year.

Lavonia. Lavonia-Cotton Mfg. Co.; complete enlargement and improvement program involving expenditure of approximately $100,000, begun last year.

Macon. Bibb Mfg. Co.; build three-story, 60 x 110 ft. extension, primarily for shipping purposes.

Manchester. Manchester Cotton Mills; install 5 new 250-h.p. boilers; replace old spoolers and warpers with new machinery; construct one-story, 80 x 70 ft. addition to warehouse; enlarge reservoir, etc.

Milstead. Milstead Mfg. Co.; add 12 new looms to equipment.

Newnan. McIntosh Mills; complete 192 x 75 ft. mill addition started last year and install 5,000 new spindles.

Palmetto. Palmetto Cotton Mills; construct new slasher room, 72 x 90 ft. and renovate main mill building.

Valdosta. Strickland Cotton Mills; enlarge plant and install 7,000 additional spindles and 350 looms; build 50 houses.

Louisiana, New Orleans. Maginnis Cotton Mills; add 1 card and 100 36-in. automatic looms.

Maine, Biddeford. Pepperell Mfg. Co., Biddeford, and Massachusetts Cotton Mills, Lowell, Mass., and Lindale, Ga., merge.

Maryland, Baltimore. Wm. E. Hooper & Sons Co.; build one-story, 60 x 72 ft. extension.

Massachusetts, Boston. Maverick Mills; start construction of two-story extension to house new waste baling press, etc.

Clinton. Clinton Towel Co.; lease part of Sterling Textile Mills; start production with 24 36-in. looms.

Fall River. Weetamoe Mills and Mechanics Mills merge under name Weetamoe Mills.

Fitchburg. Fitchburg Duck Mills; build extension to weave shed; one-story, 24 x 31 ft.; install 4 twisters, 528 spindles, 2 180-in. looms.

Lowell. Nashua (N. H.) Mfg. Co.; purchase Tremont & Suffolk Mills; consolidate modern machinery of T & S plant in one group of buildings at Lowell; and scrap obsolete equipment; later sell about one-half of T & S property to Merrimac Mfg. Co.

New Bedford. New Bedford Cotton Mills Corp.; extend weave shed, 75 x 400 ft., two stories; add 400 looms, 2 slashers.

New Bedford. Wamsutta Mills; expand facilities for handling rayon by installation of swifters, coners, twisters, peelers and cop winders.

Taunton. Taber Mill, Inc. (New Bedford); purchase plant of Corr Mfg. Co.

Michigan, Niles. Mid-West Cotton Mills, Inc.; take over and remodel plants of Towar Consolidated Mills Co., Toledo, Ohio, Towar Cotton Mills, Inc., and Acme Belting Co., Niles; add 2,000 new spindles, 40 looms to equipment at Niles.

Mississippi, Meridian. Rountree Cotton Mills, Inc.; organize with capital of $1,000,000; take over Lauderdale Cotton Mills, Meridian, and Magnolia Cotton Mills, Magnolia, Miss.; expend about $60,000 on repairs.

New Hampshire, Exeter. Exeter Mfg. Co.; build one-story 45 x 53 ft. extension and install additional looms.

New Jersey, Newton. Mazuy Mills, Inc.; erect two-story, 50 x 345 ft. extension costing $200,000; add 100 jacquard looms.

Paterson. J. E. Barbour Co.; build three-story and basement, 50 x 105 ft., and two-story, 40 x 42 ft. mill additions; also two-story and basement, 50 x 42 ft. office and warehouse.

New York, Utica. Utica Looms, Inc.; take over business of Bowes Mfg. Co.; purchase new machinery.

North Carolina, Balfour. Balfour Mills, Inc.; build new steam plant.

Belmont. Belmont Fabric Co.; finish plant started last year and begin operations; 3,500 spindles, 250 looms.

Belmont. Chronicle Mills; construct two-story extension, 80 x 100 ft., to house 5,000 additional spindles.

Cedar Falls. Sapona Cotton Mills; build 40 x 75 ft. extension to house 48 additional looms.

Central Falls. Pennsylvania Textile Mills, Inc.; construct one-story, 45 x 100 ft. extension, costing $50,000; also one-story, 35 x 50 ft. warehouse and 12 houses for operatives; add 13 cards, 2 roving frames.

Charlotte. Mercury Mills, Inc.; acquire North Charlotte plant of Mecklenburg Mills Co.; equip 300 looms with dobby heads.

Charlotte. Savona Mfg. Co.; add story to mill building and construct three-story, 60 x 90 ft. extension.

Charlotte. Scandanavia Belting Co.; construct new plant at Charlotte and transfer machinery from Paterson.

China Grove. China Grove Cotton Mills Co.; build new unit two-story, 460 x 126 ft., to house 30,000 spindles; will add 7,000 spindles later.

Cliffside. Cliffside Mills; complete three-story finishing plant started last year; build two-story, 200 x 60 ft. bleachery; install 491 looms for towels.

Columbus. Columbus Cotton Mills Co.; complete mill started last year; main building 60 x 150 ft.; warehouse 50 x 100 ft.; 12 houses; 1,428 spindles.

Concord. Gibson Mfg. Co.; build mill addition having 20,000 sq. ft. space for slasher and warper departments.

Forest City. Florence Mills; start construction of beam dyeing plant.

Franklinton. Vann-Moore Mills Co.; install machinery for producing terry towels in plant purchased last year; 140 looms.

Gastonia. Priscilla Spinning Co.; purchase 5,000 additional new spindles.

Granite Falls. Granite Falls Mfg. Co.; complete Allred Mill (formerly referred to as Granada Mill) started last year; one-story, 100 x 400 ft.; for waste yarns and mops.

Greensboro. Proximity Mfg. Co.; build small extension and improve mill at cost of $15,000; erect one-story cloth matching room costing $8,000; eight tenements, $2,700.

Greensboro. Revolution Cotton Mills; construct new dyehouse, kier room and drying room, at cost of $60,000; controlling interest in company bought by Cone interests.

High Point. High Point Yarn Mills, Inc.; incorporated for $350,000; acquire Millis Cotton Mills; install 18 new cards, 1 intermediate, 2 pickers, 24 deliveries drawing.

Kannapolis. Cannon Mfg. Co.; construct extension for 50,000 additional spindles.

Laurel Hill. Carolina Fabric Mills, Inc.; incorporated for $200,000; purchase equipment formerly operated by Vivian Spinning Co., Cherryville, N. C.

Leaksville. Wearwell Bedspread Mill; build new dyehouse and storehouse and 20 cottages for operatives, at cost of $50,000.

Lenoir. Steele Cotton Mill Co.; install 6,000 new spindles.

Lincolnton. Boger & Crawford; erect new spinning plant to house 12,000 new spindles; two-story, 200 x 106 ft.

Lincolnton. Roseland Spinning Mills; build 32 x 82 ft. extension and add new machinery; electrify plant.

Newton. Catawba Cotton Mills; install raw stock dyeing equipment.

Newton. Clyde Mills; organize and take over Clyde and Newton Mills, formerly operated by Mecklenburg Mills; install considerable new cotton yarn machinery in Clyde plant; install number of knitting machines for knit tubings and jersey cloth, also dyeing and drying equipment in Newton plant.

Pittsboro. J. M. Odell Mfg. Co.; construct one-story, 30 x 100 ft. extension to mill; 4 cottages; add 4 cards, 1 slubber, 2 intermediate frames.

Red Springs. Dora Mills, Inc.; organize, take over and start running Red Springs Cotton Mills.

Rockingham. Hannah Pickett Mills; add 104 new looms to equipment.

Roxboro. Somerset Mills; Complete plant started last year and begin production; 80 looms.

Siler City. Hadley Peoples Mfg. Co.; erect extension having 20,000 sq. ft. floor space; install 3,240 additional spindles.

Smithfield. Smithfield Cotton Mills; organize and take over plant of Ivanhoe Mfg. Co.; overhaul old and install some new machinery.

Statesville. Statesville Cotton Mills; add 1,872 spindles and auxiliary machinery.

Stony Point. Adell Mfg. Co.; incorporate for $250,000; take over plant and equipment of Rockyface Spinning Co.

Tarboro. Fountain Cotton Mills; add 2,000 new spindles to equipment.

Turnersburg. Turnersburg Mfg. Co.; capitalized at $100,000; acquire plant of Laura Ellen Watts Cotton Mill Co.; install some new machinery and water wheel.

Tuxedo. Green River Mfg. Co.; erect one-story, 40 x 60 ft. building for new mercerizing plant; remodel mill building; install additional winding machinery.

Oklahoma, Sand Springs. C. R. Miller Mfg. Co. of Oklahoma; erect one-story, 80 x 366 ft. building to house bleaching and finishing equipment; capacity 150,000 yds. per week.

Pennsylvania, Philadelphia. Collins & Aikman Co. and Bennett & Aspden Co.; merge under name Collins & Aikman Co.; purchase two-story building at 50th St. and Parkside Ave., for $90,000.

Philadelphia. Dryad Mills; take over Mill No. 1 of Hohlfeld Mfg. Co. for production of Turkish towels.

Philadelphia. Kaufman Plush Co.; erect new manufacturing building; five-story, 62 x 107 ft.

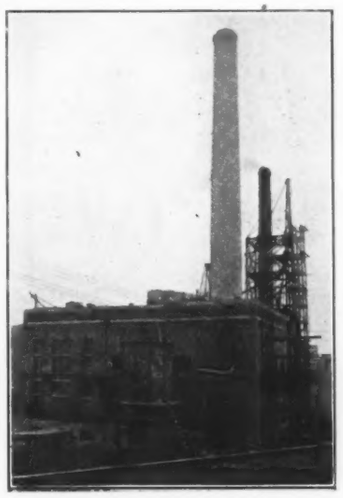
Philadelphia. La France Textile Industries; erect new boiler house costing $16,000, and $30,000 mill addition to plant of Velseal Plush Co.

Philadelphia. Manayunk Plush Mfg. Co.; erect new mill building and power house, costing $70,000.

Philadelphia. Clarence L. Meyers, Inc.; erect additional story on plant; purchase assets, machinery, etc., of Elm Converting Co.; consolidate all machinery at 2d and Somerset Sts., discontinuing Frankford branch.

Philadelphia. Morris Bros.; acquire machinery and equipment of Oxford Textile Co. and move to building formerly occupied by Oxford.

Philadelphia. Primrose Tapestry Co., Inc.; move to larger plant, purchased from H. F. Walliser Co.



New Power Plant of Cannon Manufacturing Co.

Philadelphia. Schuylkill Plush Co.; build extension to finishing plant.

Philadelphia. Standard Tapestry Co.; start erection of addition to cost $5,500.

Philadelphia. Wissahickon Plush Mills; begin construction of extension to double capacity of dyehouse.

Blossburg. Blossburg Textile Co.; install 28 new 80-in. automatic looms.

Chester. Aberfoyle Mfg. Co.; build new power house and install two 1,000 h. p. boilers.

Chester. Chester Lace Mills; extend plant and double capacity.

Doylestown. Derk Mfg. Co.; install 12 additional looms; start construction of L-shaped extension, one-story and basement, 130 x 150 ft., and 75 ft. wide; to house approximately 50 looms.

Hatfield. R. L. Kaler Co. (Philadelphia); purchase former Taubel mill at Hatfield; transfer machinery there and add some new equipment.

Nazareth. Nazareth Waist Co.; purchase plant of G. A. Schneebeli & Co. and start operations under name Nazareth Lace Co.

Scranton. Scranton Lace Co.; extend warping and winding building four stories, 116 x 123 ft.; two top floors for club quarters, cafeteria and gymnasium.

Rhode Island, Ashton. Lonsdale Co.; complete extension and install 2 additional slashers, increasing total to 4.

Pawtucket. Anawan Textile Co.; succeed to business of Standard Yarn Co.; add 50 looms.

Pawtucket. Arbeka Webbing Co.; construct one-story, 71 x 109 ft. mill addition; add new looms and auxiliary machinery.

Pawtucket. Ervma Weaving Co.; construct extension and install 52 new looms.

Pawtucket. Ralph Levye Textile Co.; move from Providence to larger quarters in Golf Bldg., Pawtucket.

Pawtucket. Phillips-Jones Corp. lease portion of plant formerly operated by D. Goff & Sons, Inc.; transfer machinery from New York City and Allentown, Pa., plants to Pawtucket.

Shannock. Columbia Narrow Fabric Co.; erect 40 x 60 ft. addition for expansion of calendering department.

West Warwick. Riverpoint Lace Works; purchase Lippitt Mill, formerly operated by B. B. & R. Knight; transfer machinery there; install yarn bleaching and dyeing equipment.

Woonsocket. Rhode Island Plush Mills; build dyehouse and equip with new machinery.

Woonsocket. Woonsocket Falls Mill; construct six-story, 60 x 120 ft. addition; also two-story extension.

South Carolina, Anderson. Anderson Cotton Mills; build 30 cottages.

Anderson. Appleton Mfg. Co.; proceed with expansion started last year; complete two-story building for dyehouse, bleachery and warehouse purposes; 50 houses; install additional machinery.

Anderson. Riverside Mfg. Co.; complete extension having 15,000 sq. ft. floor space (started last year); install 2,280 additional spindles.

Arkwright. Arkwright Mills; construct new cloth room; 70 x 100 ft.; replace plain looms with new automatic looms.

Belton. Belton Mills; construct new power plant; two-story, 41 x 44 ft.; equip with turbo-generator of 2,500 k. w. cap.

Fort Mill. Fort Mill Mfg. Co.; build 35 houses; install new looms for making sheeting.

Gaffney. Gaffney Mfg. Co.; construct 100 houses for night operatives.

Goldville. Joanna Cotton Mills; complete 50 houses for operatives; also new slasher room.

Greenville. Brandon Mills; build 100 homes for employes.

Greenville. Piedmont Plush Mills, Inc.; complete plant started last year and begin operations; 24 looms.

Greenville. F. W. Poe Mfg. Co.; build new opening room having 5,000 sq. ft. floor space; install new opening and drawing machinery.

Honea Path. Chiquola Mfg. Co.; construct new opening room; enlarge steam plant and equip with new water tube boilers.

Laurens. Laurens Cotton Mills; install 4,112 additional spindles; electrify entire plant.

Lyman. Pacific Mills; construct 45 houses for operatives.

Newberry. Kendall Mills, Inc.; acquire Mollohon Mfg. Co.; plan to install about 8,000 additional spindles.

Ninety Six. Ninety Six Cotton Mill; build three-story and basement, 245 x 125 ft. addition to house approximately 20,000 spindles purchased from Fairhaven Mills, New Bedford, Mass.; also construct 125 cottages.

Piedmont. Piedmont Mfg. Co.; construct two one-story opener rooms.

Red River. Red River Cotton Mills; build 56 houses; install a breaker picker, 20 additional cards, 2 slubbers, 4 intermediate frames, 2 spoolers.

Seneca. Seneca Co.; erect new weave shed, one-story and part basement, 217 x 134 ft.; two-story, 160 x 200 ft. warehouse; 175 houses; transfer 20,000 spindles and 500 looms from Ann and Hope Mill at Lonsdale, R. I., to Seneca.

Spartanburg. Martel Mills, Inc.; install 8,280 additional spindles and 436 looms in addition erected last year; also build number of houses for operatives.

Ware Shoals. Ware Shoals Mfg. Co.; install additional machinery in bleachery, new machinery for processing rayon; build addition to house starching machinery.

Woodruff. Woodruff Cotton Mills; let contract for constructing 75 four-room cottages.

York. Cannon Mfg. Co.; build 82 x 100 ft. extension to house about 50 new looms.

Tennessee, Chattanooga. Dixie Mercerizing Co.; complete 8,000 spindle addition started last year; also build one-story, 107 x 103 ft. extension to mercerizing plant.

Johnson City. Gloria Textile Corp.; install 120 additional looms as planned last year.

Shelbyville. Shelbyville Mills, Inc.; build 190-ft. extension to Sylvan plant, acquired last year.

Texas, Bowie. Bowie Cotton Mills; complete plant started last year; 5,000 spindles, 6 broad looms.

Dallas. C. R. Miller Mfg. Co.; extend mill building 150 ft.; construct two warehouse compartments and 20 houses; install 5,000 additional spindles.

Galveston. Galvez Mills, Inc.; erect new plant as planned last year and install 13,500 spindles formerly operated by Nobska Spinning Co., Taunton, Mass.

Houston. Houston Cotton & Twine Mills, Inc.; build extension and install 27 additional cards and 5,184 new spindles.

Houston. Houston Textile Mills; construct extension to house 3,000 spindles and 100 looms.

Kingsville. San Antonio Cotton Mills; install new looms at cost of $50,000.

Marble Falls. Marble Falls Textile Mills Co.; complete mill building and power house; proceed with construction of village; 10,000 spindles.

Sherman. Sherman Mfg. Co.; build 43 x 25 ft. extension for tying-in room and office.

West. Brazos Valley Cotton Mills; add 16 40-in. looms and 14 cards.

Wisconsin, Janesville. Hough Shade Corp.; construct new weave shed; one-story, 20 x 40 ft., and install 2 additional looms; also erect new warehouse, 40 x 60 ft., and a coal shed, 40 x 25 ft.

Canada, St. Mary's, Ont. Roxborough Textile Mills; purchase building at St. Mary's and transfer machinery from London, Ont., to new quarters.

Granby, Que. Carl Stohn of Canada, Ltd.; install 24 additional looms.

St. Hyacinthe, Que. Goodyear Cotton Co.; purchase plant of Canadian-Manhasset Cotton Co. at St. Hyacinthe; install 5,000 additional spindles and auxiliary machinery there..

WOOL MILLS

California, Long Beach. Pioneer-Pacific Worsted Co.; and 2 sets cards and 720 spindles.

Los Angeles. Worth Bros.; erect new dye-

WOOLFORD

WOOD

Since 1854

TANKS

Have met the exacting requirements of the Textile Industry. We solicit an opportunity to build for you, and will strive to meet your continued orders.

Rectangular Tank with all rods outside the wood. Tanks of this character are also made up with rods running through the wood.

WOOLFORD WOOD TANKS

REGISTERED TRADE MARK

Monel lined rectangular tank. We also monel line tanks to be used in connection with processing machines.

G. WOOLFORD WOOD TANK MFG. CO.

Factory—Darby, Pa.

Mail address—Paschall P. O., Philadelphia

Fabreeka exhibit at the Southern Textile Show in Greenville.

TYPICAL CASES of SUPERIORITY

Fabreeka speeder belts have been running 3½ years on a 120-hour a week basis showing increased production and no appreciable wear.

On looms, Fabreeka has been running three years on a 110-hour a week basis directly under humidifiers at 80% humidity, and never taken up. Under these conditions, Fabreeka has shown four more picks per minute than has been secured with other types of belting.

Fabreeka Belts have driven spinning frames for over three years on a 110-hour a week basis without any take-up. These belts show three more turns of the front roll than any other type of belt used.

In dye houses, Fabreeka has run 3½ years on a 120-hour a week basis, subject to steam, heat, and chemical laden atmosphere without any signs of deterioration.

FABREEKA BELTING COMPANY

120 High Street, Boston
Rock Hill, South Carolina

New York Branch
461 Eighth Ave.

Chicago Branch
535 So. Franklin St.

Distributors located throughout the U. S. A.

house; one story, 40 x 75 ft., costing $18,000.

Connecticut, Baltic. New England Mills Co. (Norwich, Conn.); purchase Daniel Boone Woolen Mills.

Rockville. American Mills Co.; build extra story for pattern and sewing departments.

Safford Springs. Cyril Johnson Woolen Co.; install new hydro-electric plant.

Talcottville. Talcott Bros. Co.; purchase Ravine Mill and Phoenix Mill at Vernon, Conn., with water rights, from Paul Ackerley.

Georgia, Rossville. Peerless Woolen Mills; complete one-story, 140 x 460 ft. addition started last year and install 100 broad looms.

Illinois, Chicago. Olson Rug Co.; construct initial unit of new mill; five-story and basement, 156 x 270 ft., costing $400,000 with equipment.

Maine, Camden. Maine Woolen Mills, Inc.; purchase Mt. Battie Mill and begin production.

Dexter. Center Woolen Mills; take over Morrison Mill No. 2; build 30-ft. addition to mill and new dyehouse.

Limerick. Limerick Mills; construct four-story, 402 x 45 ft. extension and install 10,000 additional spindles; also erect 20 houses for operatives.

Portland. Colonial Rug Co.; capitalized at $10,000; succeed to business of Pinkham Associates.

Sangerville. F. W. Phelps & Sons, Inc.; purchase Old Colony Woolen Mills and start operations there.

Massachusetts, Clinton, Roubaix Mills, Inc.; Complete new weave shed having 20,000 sq. ft. floor space, started last year; install additional looms.

East Brookfield. Daniels Mfg. Co.; extend weave shed 50 x 100 ft., one story.

East Douglas. Hayward Woolen Co.; remodel three-story, 40 x 80 ft. storehouse and erect one-story, 40 x 60 ft. brick receiving shed; total cost about $50,000.

Franklin. Hayward Mills; erect one-story mixer building, 61 x 53 ft.

Holyoke. Germania Mills; build one-story boiler house addition at cost of about $40,000.

Jefferson. Jefferson Mfg. Co.; complete carding and spinning building started last year; two-story and basement, 208 x 85 ft.

Lawrence. Walworth Bros., Inc.; build one-story and basement dyehouse addition, 50 x 107 ft.

Millbury. Millbury Spinning Co., Inc.; construct new storehouse; add winder and 16 looms.

Monson. A. D. Ellis Mills, Inc.; commence construction of new steam power plant to cost about $100,000.

Monson. Monson Textile Co., Inc.; incorporate for $50,000; purchase old branch mill of W. B. Dunn Co., Providence; remodel and start operations with 28 looms.

Spencer. Bigwood Woolen Co.; build new dyehouse; one-story, 38 x 50 ft.

Uxbridge. Davis & Brown Woolen Co.; construct two-story, 50 x 25 ft. extension to dyehouse.

Uxbridge. Uxbridge Worsted Co., Inc.; erect three-story, 244 x 80 ft. addition, costing $250,000; add 4 sets cards, 8 270-spindle jacks, 48 broad looms.

Uxbridge. Waucantuck Mills; build one-story, 80 x 100 ft. extension to dyeing and finishing department.

West Medway. Stone Mill Co.; construct frame storehouse; one-story, 60 x 25 ft.; also mill addition; install 1 set cards, 8 looms, 1 mule, 312 spindles; also start branch plant at Holliston.

Worcester. Smith Mills, Inc.; purchase plant at 370 Park Ave. and remodel; also build one-story addition; transfer machinery from Milford to Worcester.

Worcester. Sterling Worsted Mills; construct office building; two-story, 25 x 51 ft.; add 4 looms.

Worcester. M. J. Whittall Associates; erect four-story, 82 x 122 ft. storage building; two-story, 30 x 104 ft. building for water purifying system, and one-story blacksmith shop.

Minnesota, Faribault. Faribault Woolen Mill Co.: construct two-story, 72 x 90 ft. mill addition, costing $20,000; install new boiler, stoker, etc., at cost of $10,000; also picker, napper and cloth washer.

New Hampshire, Charlestown. Charlestown Woolen Co.; install 1 set cards and 10 looms.

Rochester. Wyandotte Worsted Co. (Waterville, Me.); purchase Old Colony Woolen Mills, remodel and install new cards, looms and finishing machinery.

New Jersey, Garfield. Passaic Woolen Mills Corp.; capitalized at $100,000; take over and start operation of Belmont Textile Mill.

Newark. American Hair Felt Co.; build mill addition, one-story, 96 x 175 ft., at cost of $35,000; also three-story, 100 x 190 ft. extension, costing $115,000, with equipment.

New York, Albany. Albany Felt Co.; build two-story extension.

Amsterdam. Mohawk Carpet Mills; build six-story, 200 x 105 ft. warehouse for Shuttleworth branch.

Newburgh. Crex Carpet Co.; construct three-story, 125 x 125 ft. extension.

Oregon, Portland. Oregon Worsted Co.; start building 100 x 100 ft. extension.

Pennsylvania, Philadelphia. Almeda Mills; purchase equipment of Kensington Mills, consisting of 20 broad looms, 1 warping mill, etc., and transfer to Almeda plant.

Philadelphia. Marshall Field Mills Corp.; build $10,000 mill addition.

Philadelphia. S. B. & B. W. Fleisher, Inc., Roosevelt Mills and Hosey Worsted Co., Inc., merge under name S. B. & B. W. Fleisher, Inc.; machinery and equipment of Roosevelt and Hosey mills moved to Fleisher plant.

Philadelphia. Frankford Worsted Mills; purchase machinery and equipment of H. P. Rinehart's Sons, Inc., and Almont Worsted Co., Inc.

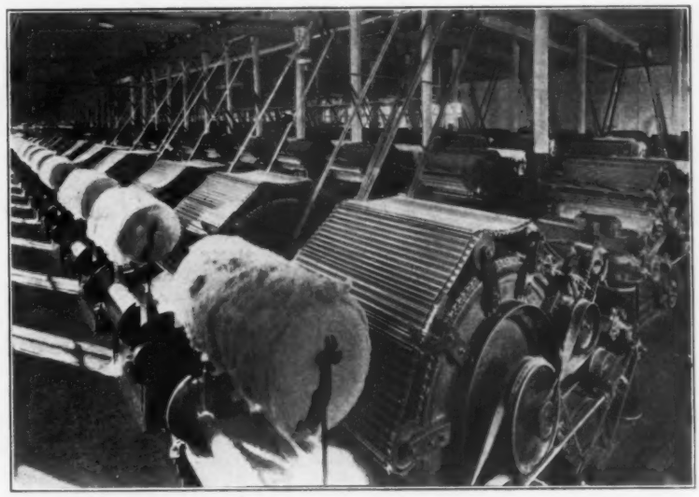
Philadelphia. Keystone Spinning Mills Co.; erect one and two story and basement addition, 50 x 120 ft.

Philadelphia. Chas. W. Poulson & Sons Carpet Co., Inc.; purchase plant of Overbrook Carpet Co.

Lenni Mills. Arthur Brown & Sons; chartered with capital of $6,000; purchase Lenni Mills plant of George Brown's Sons, Inc.

Woolrich. John Rich & Bros.; erect boiler house at cost of about $15,000 and equip with 300 h. p. water tube boiler; also install 6 92-in. looms and 1 90-in. steam press.

Rhode Island, Arctic. Rosella Mills, Inc.; transfer machinery and equipment from



Card Room of Joanna Cotton Mills

Anthony to new two-story, 50 x 100 ft. building at Arctic.

Ashaway. Ashaway Woolen Co.; install 16 additional looms.

Bristol. Cranston Worsted Mills; erect four-story, 135 x 70 ft. mill addition.

East Greenwich. Greenwich Mills; build three-story, 94 x 112 ft. extension to house looms, dressing and winding equipment.

Greenville. Stillwater Worsted Mills; construct weave shed, 100 x 55 ft., at Greenville; complete addition to Harrisville mill started last year; purchase mill buildings and power plant of Coronet Worsted Co., at Mapleville.

Pascoag. Pascoag Woolen Mills; incorporated for $75,000; purchase former Granite Mill of A. L. Sayles & Sons Co.; plan to start up early in 1927.

Wakefield. Wakefield Textile Co.; erect new building and move looms into it; also install 11 new looms.

Woonsocket. Fairmount Worsted Co.; build one-story, 25 x 80 ft. storehouse; install 10 additional looms, 2 winders.

Tennessee, Cleveland. Hardwick Woolen Mills; install 1,188 additional spindles, 2 cards, 1 picker.

Knoxville. Jefferson Woolen Mills; build extension to dyehouse and install new machinery.

West Virginia, Martinsburg. Berkeley Woolen Co.; erect four-story, 160 x 60 ft. mill addition with four-story L-extension, 26 x 50 ft.

Parsons. Acworth (Ga.) Mills; take over Parsons plant of Philippi Blanket Mills, Inc.; install additional picking machinery; build one-story, 88 x 40 ft. dyehouse.

Philippi. New Philippi Blanket & Textile Mills; take over, improve and start operation of former Philippi Blanket Mills.

Wisconsin, Milwaukee. American Hair Felt Co.; build one-story, 130 x 150 ft. mill addition at cost of $35,000.

Canada, Arnprior, Ont. Kenwood Mills, Ltd.; construct 90 x 150 ft. extension to main building; also erect new office building.

Hamilton, Ont. Porritts & Spencer (Canada), Ltd.; enlarge plant at cost of about $35,000.

Peterboro, Ont. Canadian Woolens, Ltd.; purchase Otonabee Mills, Ltd.

Renfrew, Ont. Renfrew Textiles, Ltd.; construct one-story, 115 x 33 ft. extension; add 1 set cards, 2 mules, 13 looms.

KNITTING MILLS

Alabama, Albany. Albany Hosiery Mills; install 10 additional ribbers, 9 knitting machines.

Gadsden. Davis & Allcott Co.; erect new mill; one-story, 60 x 182 ft.

Huntsville. Erwin Mfg. Co.; construct one-story, 50 x 200 ft. and 50 x 40 ft. L addition; install additional machinery.

California, Los Angeles. Jerry-Jane, Inc.; install 4 new knitting machines.

Los Angeles. Jones Knitting Mills; move to larger building and add 1 jacquard, 2 circular and 2 flat knitting machines.

Los Angeles. Los Angeles Knitting Co.; build new one-story, 150 x 150 ft. plant at Hollydale and transfer machinery there.

Los Angeles. Mission Hosiery Mills; install 24 additional knitting machines.

Los Angeles. Pacific Knitting Mills; lease 30,000 sq. ft. additional space; add 5 latch needle knitting and 8 sewing machines.

Pomona. A. M. Fowkes; erect new mill; one-story, 90 x 105 ft.; add 3 jacquard machines.

Connecticut, Torrington. Severin Mfg. Co., Inc.; build two-story addition.

Georgia, Carrollton. Carroll Mills; purchase two-story, 100 x 100 ft. building, remodel and install additional knitting machines, sewing machines and braiders.

Columbus. Perkins Hosiery Mills; start construction of one-story, 62 x 73 ft. mill addition.

Newnan. Newnan Hosiery Mills; erect new mill, 80 x 450 ft.; also new boiler plant and dyehouse; will install 190 additional knitting machines.

Villa Rica. Villa Rica Mills, Inc.; take over Villa Rica Hosiery Mills; build one-story, 38 x 40 ft. extension and install additional knitting machines and loopers.

Illinois, Mt. Vernon. Sexton Mfg. Co. (Fairfield, Ill.); build branch plant and equip with 250 sewing machines.

Indiana, Indianapolis. Real Silk Hosiery Mills; build 4½-story extension, 100 x 200 ft. at cost of $300,000; install additional knitting machines.

New Haven. New Haven Silk Hosiery Co.; erect two-story, 104 x 48 ft. addition and install 8 new knitting machines.

South Bend. Wilson Bros.; add 100 hosiery knitting machines.

Iowa, Des Moines. Rollins Hosiery Mills; build one-story extension, costing about $65,000.

Kentucky, Paducah. Paducah Hosiery Mills; add 14 260-needle knitting machines, two rotary dyeing machines, 1 extractor; also establish printing department.

Williamsburg. Williamsburg Knitting Mills; install dyeing and finishing equipment.

Massachusetts, Ipswich. Ipswich Mills; install number of additional f. f. machines; also dyeing machines to take care of increased production.

Needham Heights. William Carter Co.; install new machinery for making rayon underwear in Massachusetts plants; transfer cotton and merino wool departments from Reidsville, N. C., to plants of Carter-Collier Co., Barnesville and Macon, Ga.; Reidsville plant exclusively for men's and boys' nainsook garments.

Michigan, Adrian. Adrian Knitted Products Co.; build new dyehouse; one-story, 80 x 130 ft., costing $8,500; also install 150 additional knitting machines.

Minnesota, Minneapolis. Strutwear Knitting Co.; construct top addition to mill; two stories, 58 x 132 ft., at cost of $30,000; add $100,000 worth of machinery.

New Hampshire, Belmont. Belmont Hosiery Co.; add 4 f. f. knitting machines, 2 loopers, 2 sewing machines.

Franklin. Webster Co., Inc.; organize and absorb G. F. & S. Hosiery; move to larger quarters and increase equipment.

Lebanon, Everett-Norfolk Knitting Mills Corp.; formed by merger of Norfolk Knitting Mills Corp., Everett Knitting Works and Everett-Norfolk Paper Box Co.; build additions at Lebanon and move machinery there.

New Jersey, Camden. Wm. F. Taubel, Inc.; install 30 f. f. machines.

Clifton. Conrad Hosiery Co.; construct one-story, 50 x 150 ft, addition, costing $30,000.

Irvington. Arrow Silk Hosiery Co.; build new mill, two-story, 200 x 50 ft., at Irvington, and transfer machinery from Newark; also add new full fashioned machines.

Pleasantville. Starr Knitting Mills, Inc.; erect new plant, one-story, 200 x 90 ft. at Pleasantville and transfer machinery from Philadelphia.

Riverside. Maidwell Hosiery Co., Inc.; erect new dyehouse; one-story, 60 x 100 ft.

New York, Brooklyn. Ess Tee Knitting Mills; move to larger quarters and install additional knitting, sewing and pressing machines.

Brooklyn. Merit Hosiery Co.; erect five-story, 45 x 185 ft. building at cost of $200,00; install machinery costing about $700,000.

Elmhurst. Propper Silk Hosiery Mills, Inc.; build two-story, 50 x 158 ft. addition.

Fonda. Fonda Glove Lining Co.; build new picking room, one-story, 36 x 50 ft.

Fort Plain. Bailey Knitting Mills; enlarge boiler house and install additional boiler, also extend washing and dyeing departments.

Fort Plain. Wuerdeman Textile Mills; lease additional space and install 2 new tricot machines, 2 warpers and winders.

Fultonville. Becker & Ellis Silk Co.; purchase plant of M. Y. E. Co. and install 6 168-in. tricot knitting machines.

Fultonville. Judson D. Yates; install 1 additional weaving machine and 1 80-end winder.

New York. Merrill, Clark, Meinig Corp.; formed by merger of Merrill Silk Co., with mills at Corning, Dunkirk, Hornell and Wellsville, N. Y.; Clark Bros., with mills at Glens Falls, Saratoga Springs and Schuylerville, N. Y., and E. Richard Meinig Co., Reading, Pa.

New York. Saligold Mills, Inc.; move sewing machinery from Oswego to Camden, N. Y. and knitting machinery from Oswego to New York, where also install 15 additional knitting machines.

Oswego. Oswego Rayon Corp.; continue expansion program started last year, involving new knitting machines, finishing and testing equipment.

St. Johnsville. Manny-Rielly Co. (Valatie, N. Y.); lease building at St. Johnsville and equip for branch plant.

Stillwater. Stillwater Knitting Co., Inc.: construct mill addition, one-story, 100 x 60 ft., to house 70 additional knitting machines.

Utica. McLoughlin Textile Corp.; start erection of three-story addition for expansion of rayon underwear department.

Valatie. Valatie Mills Corp.; build one-story power house addition.

Whitesboro. Augusta Knitting Corp. (Utica, N. Y.); purchase Alliance Knitting Mills; move equipment of plants at Gray Ave., Utica, and Sherburne, N. Y., to Whitesboro.

North Carolina, Albemarle. Wiscassett Mills Co., Knitting Dept.; erect one-story 110 x 110 ft. annex; increase f. f. capacity.

Burlington. Graham Hosiery Mills, Inc.; construct one-story 30 x 75 ft. extension.

Burlington. McEwen Knitting Co.; install 12 new 42-gauge, 20-section machines for f. f. hosiery.

Burlington. Standard Hosiery Mills; build three-story, 34 x 60 ft. mill extension and 16-room boarding house; add 40 knitting machines, 6 loopers, 3 winders; purchase mill buildings, operatives houses and 52 acres of land of Alamance Cotton Mills, Graham, N. C., and establish dyeing and finishing plant there.

Charlotte. Hudson Silk Hosiery Co., Inc.; lease building and transfer machinery from Union City, N. J., to Charlotte; add 10 new f. f. knitting machines.

Durham. Golden Belt Mfg. Co.; install 12 f. f. hosiery knitting machines.

Kernersville. Vance Knitting Co.; build addition to practically double capacity.

Lexington. Shoaf-Sink Hosiery Mill Co.; install 20 additional knitting machines, 1 24-spindle winder, 2 loopers, 2 sewing machines.

Mt. Airy. Mt. Airy Knitting Co.; capitalized at $100,000; purchase building and equip with machinery from Crossingham Knitting Co., Philadelphia; also add new machinery.

North Wilkesboro. Wilkes Hosiery Mills Co.; award contract for two-story, 60 x 100 ft. mill addition.

Shelby. Janet Hosiery Mills; build 50 x 70 ft. mill addition and new boiler room; install 125 h. p. boiler and water softener; add 4 new dyeing machines.

Thomasville. McDonald & Heathcote; transfer machinery from Girard Hosiery Co., 2526 N. Hope St., Philadelphia, to Thomasville; 60 knitting machines.

Winston-Salem. Hanes Hosiery Mills Co.; move into new plant started last year; two-story, 500 x 125 ft.; dyehouse, 2½ stories, 150 x 90 ft.

Ohio, Piqua. Atlas Underwear Co.; purchase plant and machinery of Imperial Underwear Corp.; transfer machinery to Atlas mill.

Oregon, Portland. Columbia Knitting Mills; install 3 additional latch needle knitting, 1 flat knitting and 5 sewing machines.

Portland. Jantzen Knitting Mills; construct one-story, 100 x 100 ft. mill addition, costing $17,000, exclusive of equipment.

Pennsylvania, Philadelphia. Adora Hosiery Mills; buy plant at 3d and Huntingdon Sts.; move machinery there, add 30 golf hose machines, 5 circular jacquard machines, 10 body machines, 30 sewing machines.

Philadelphia. Alberta Knitting Mills; move

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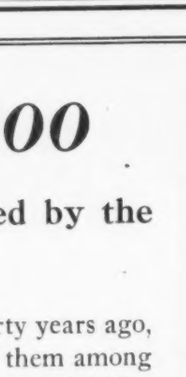

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to new and larger quarters, having 21,000 sq. ft. space; add new machinery.

Philadelphia. Arr-Tee Knitting Mills; move to larger quarters and install additional equipment.

Philadelphia. Artcraft Silk Hosiery Mills, Inc.; build new plant having a two-story, 100 x 220 ft. section and a one-story part with 27,000 sq. ft. floor space.

Philadelphia. Atlas Hosiery Mills, Inc.; move to new and larger quarters and approximately double capacity.

Philadelphia. R. T. Betoff Knitting Mills (formerly Wear Well Knitting Mills); install additional machinery for making bathing suits and sweaters.

Philadelphia. Wm. Brown Co.; purchase three acres of ground and start construction of new mill unit to have 100 new f. f. machines; buy plant of Walker Mfg. Co. and plan to install new f. f. machines there.

Philadelphia. Co-Ed Knitting Mills; build addition and approximately double capacity.

Philadelphia. Concordia Silk Hosiery Co., Inc.; erect new two-story and basement mill and move machinery there.

Philadelphia. Daintyfoot Hosiery Co.; add 9 new f. f. machines.

Philadelphia. Fox Chase Knitting Mills; construct two-story addition, to house 24 new f. f. machines.

Philadelphia. Franklin Hosiery Co.; install 24 f. f. machines.

Philadelphia. Gotham Silk Hosiery Co.; erect three-story and basement, 55 x 200 ft. addition to Philadelphia plant; purchase plant of Largman, Gray Co., Frankford; buy assets of Onyx Hosiery, Inc., New York.

Philadelphia. Harmatex Silk Hosiery Mills; purchase machinery of Hess Knitting Mills, and install at Hope and Huntingdon Sts.

Philadelphia. Hy Quality Hosiery Mills; acquire new building at Worth and Herbert Sts., Frankford, and change name to Triple Wear Hosiery Mills, now make only f. f. hosiery.

Philadelphia. Locke Hosiery Mill; organized by E. C. Locke and J. Allen Locke; start operations with 90 knitting machines, 75 ribbers, 20 loopers and 5 sewing machines; erect addition.

Philadelphia. Nomend Hosiery Mills; add 7 24 f. f. machines.

Philadelphia. Oliver Knitting Co.; move into new building started last year; 40,000 sq. ft. space; purchase machinery to double capacity.

Philadelphia. Perfection Hosiery Dyeing & Finishing Co.; incorporate to continue business of Perfection Finishing Works; move to larger quarters.

Philadelphia. Quaker Hosiery Co.; install dyeing and finishing equipment and additional f. f. machinery.

Philadelphia. Schletter & Zander, Inc.; complete new mill started last year, costing about $100,000; build dyehouse and garages, at cost of $17,500 and boiler house, $6,000.

Philadelphia. Spring Knit Hosiery Mills, Inc.; install 30 additional knitting machines; also loopers and sewing machines.

Philadelphia. Springtex Hosiery Mills (change name from Spring Maid Hosiery Mills); install additional knitting machines.

Philadelphia. Spuntex Knitting Mills; complete new building started last year; 20,000 sq. ft. additional space, equip with 24 f. f. machines.

Philadelphia. Superior Knitwear Corp.; more than double capacity by installing additional knitting machines.

Philadelphia. Triumph Hosiery Mills, Inc.; add 10 f. f. machines to equipment.

Philadelphia. Weber & Hunter, Inc.; take over Hunter Hosiery Mills and add 12 f. f. machines.

Philadelphia. Wallace Wilson Hosiery Co.; install 6 new f. f. machines.

Allentown. American Rayon Products Corp.; purchase building at 735 Pittston St. and move equipment there; increase capacity.

Bally. Gehman Knitting Mill; build two-story, 20 x 26 ft. mill extension.

Easton. Chipman Knitting Mills; build three-story 105 x 106 ft. addition and transfer machinery from Quakertown, Pa. plant.

Hamburg. Burkey Underwear Co.; install 9 f. f. machines.

Hatboro. Oscar Nebel Co., Inc.; install complete dyeing equipment.

Hazleton. Geissler Knitting Mill; purchase Hazleton mill of Century Beverly Corp.; operate 89 knitting machines.

Lansdale. Lansdale Silk Hosiery Co.; erect new building at cost of $100,000 and install additional machinery.

Middletown. Middletown Knitting Co., Inc.; install 10 additional knitting machines, 4 ribbers, 4 loopers; purchase 75% interest in Okeh Hosiery Mills, Inc., Lemoyne, Pa.

Nazareth. Kraemer Hosiery Co.; construct one-story, 100 x 220 ft. addition at cost of $60,000; install 20 45-gauge f. f. machines and 8 48-gauge f. f. machines.

Nescopeck. Nesco Knitting Mills, Inc.; purchase building for expansion; install additional winding and finishing machinery.

Norristown. Herbert Hosiery Mills; purchase mill formerly operated by Lewis E. Taubel, Inc. (Star Knitting Mills); consolidate Conshohocken and Philadelphia plants at former Taubel mills, after making various improvements there.

Reading. Busy Bee Hosiery Co., Inc.; add 12 f. f. machines to equipment.

Reading. Levan-Gehrke Textile Mills, Inc.; chartered with capital of $250,000; take over Gehrke Knitting Mills and plant of Harold M. Levan.

Reading. E. Richard Meinig Co.; construct four-story, 60 x 140 ft. addition and equip for hosiery dyeing; also increase piece goods dyeing equipment.

Reading. Penn Hosiery Mills; purchase Value Hosiery Co's. building, 706-8 Mulberry St., make alterations preparatory to moving there.

Reading. Max Pfau Hosiery Mill, Inc.; purchase Brumbach plant at 14th and Muhlenberg Sts.; transfer machinery there and add some new equipment.

Red Hill. Lewis E. Taubel, Inc.; build U-shaped addition to Red Hill plant; two wings, 152 x 34 ft., with frontage of 130 ft.; install 185 additional new knitting machines.

Rosedale. Rosedale Knitting Co.; build extension to mill.

Shillington. Fairy Silk Mills; erect new mill building at cost of $35,000; one-story, on site 85 x 150 ft.

Shillington. Felden Bros. Co., Inc.; build new f. f. plant as planned last year; one-story and basement, 100 x 170 ft.

Sinking Springs. H. W. Antnony Co.; complete first unit of branch plant and equip with 25 f. f. machines.

Spring City. Schuylkill Valley Mills, Inc.; construct three-story, 83 x 90 ft. mill addition, with wing 30 x 18 ft., connecting with old building; install additional f. f. machines.

Stevens. Bowman Textile Co.; install 4 f. f. machines in new quarters at Stevens; discontinue production of seamless hosiery at Reinholds Station.

Rhode Island, Thornton. Sulloway Mills (Franklin, N. H.); purchase 17 f. f. knitting machines from George E. Boyden & Son, and start operation.

South Carolina, Anderson. Anderson Hosiery Mills; build one-story, 24 x 70 ft. mill addition; install 30 Model K knitting machines and about 25 machines for production of bathing suits.

Gaffney. Henry River (N. C.) Mfg. Co.; purchase plant of Sultrene Mills, Inc. and start operating; install additional knitting machines.

Tennessee, Alton Park. McAllester Hosiery Mills, Inc. (Chattanooga); purchase plant and equipment of Tennessee Textile Mills.

Chattanooga. Champion Knitting Mills; complete two-story building started last year; also build two-story, 50 x 80 ft. extension to allow enlargement of finishing and looping departments.

Chattanooga. Davenport Hosiery Mills; complete full fashioned unit started last year; 36 f. f. machines for initial operations; later add 100 f. f. machines.

Chattanooga. Nick-A-Jack Hosiery Mills; construct 40 x 110 ft. addition to house finishing and shipping departments; 40 x 45 ft. looping room; install 52 additional knitting machines.

Chattanooga. Smith Hosiery Mills; purchase 20 f. f. machines; install 8 during 1926; 12 to be set up in 1927.

Clinton. Magnet Knitting Mills; complete f. f. hosiery unit started last year; 12 20 section leggers and 4 footers.

Kingsport. Kingsport Hosiery Mills Inc.; start erection of new mill building to be equipped with 12 f. f. machines; install 40 half hose machines and 40 misses' fancy machines.

Knoxville. Ashe Hosiery Mills; install 125 additional knitting machines.

Knoxville. Standard Knitting Mills; construct new warehouse; two-story and basement, 198 x 96 ft.

Lenoir City. Charles H. Bacon Co.; install 300 split foot knitting machines.

Maryville. Ideal Hosiery Mills; erect new warehouse; one-story, 50 x 40 ft., and increase basement space in main mill building.

Nashville. Washington Hosiery Mills; install new dyehouse, boarding room and finishing plant; also 50 additional knitting machines.

Vermont, Bennington. Bennington Hosiery Co.; construct 60 x 100 ft. storehouse.

Virginia, Chase City. Chase City Hosiery Mill (branch of S. S. Miller Hosiery Mill, Reading, Pa.); lease building and transfer 100 knitting machines from Gibraltar, Pa., mill to Chase City.

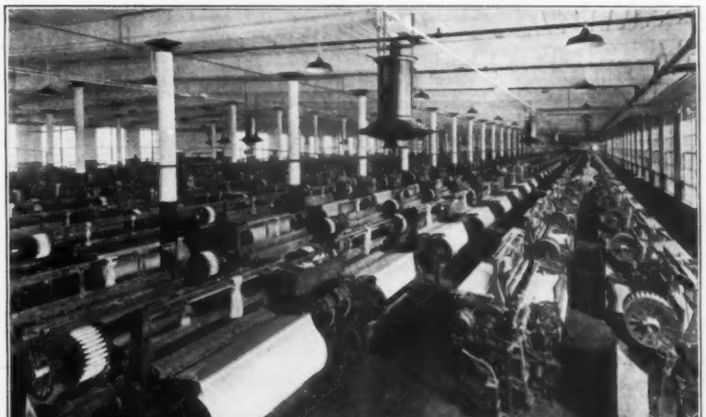
Petersburg. Twentieth Century Rayon Textiles, Inc.; formed by merger of Twentieth Century Knitting Mills, Lang Knitting Mills and Lubinette Knitting Mills; build three-story, 50 x 200 ft. addition to Lubinette plant at Petersburg and transfer some machinery of Lang, Lubinette and Twentieth Century mills, New York, to Petersburg.

Radford. Paul Knitting Mills; install 50 additional knitting machines.

Wisconsin, Kenosha. Allen-A Co.; construct one-story top addition; install 50 additional f. f. machines.

Manitowoc. Martz Knitting Co.; formed as subsidiary of Cadet Knitting Co., to take over knitted outerwear end of business; transfer machinery from Chicago; also add some new machinery.

Marinette. Marinette Knitting Mills, Marinette and Oconto, Wis., and Great Western Knitting Co., Milwaukee, consolidate.



Weave Room of Joanna Cotton Mills

Milwaukee. Holeproof Hosiery Co.; erect one-story, 150 x 150 ft. extension at cost of $50,000; install additional knitting machines; purchase mill of Columbia Knitting & Mfg Co.

Neenah. Jersild Knitting Co. and Green Bay Knitting Mills consolidate at Neenah under name Jersild Knitting Co.; add 7 new knitting machines.

Canada, Hamilton, Ont. Chipman-Holton Knitting Co.; construct new buildings to accommodate additional dyeing equipment; three-story, 50 x 60 ft. and one-story, 30 x 60 ft.

Hamilton, Ont. Mercury Mills, Ltd.; complete four-story, 82 x 75 ft. warehouse; install 38 additional knitting machines, 4 loopers, 2 sewing machines.

Hanover, Ont. Allen Silk Mills, Ltd.; purchase plant of Hanover Converters, Ltd. and transfer machinery from Toronto to Hanover; retain Hanover Converters' sweater machinery.

Hastings, Ont. Lavole Knitters, Ltd.; purchase building in Hastings, remodel and transfer equipment there from Peterboro; also install additional machinery.

St. Catharines, Ont. Monarch Knitting Co., Ltd.; take over another floor and install 5 additional f. f. machines.

Tavistock, Ont. J. G. Field & Son; build two-story, 43 x 62 ft. extension; add 1 looper.

Woodstock, Ont. Harvey Knitting Co., Ltd.; construct four-story, 76 x 65 ft. extension and install new machinery costing about $26,000.

Sherbrooke, Que. Canadian Silk Products, Ltd.; erect new two-story building, 194 x 90 ft., move there and add 21 f. f. knitting machines, 12 loopers, 12 sewing machines.

SILK MILLS

California, Hermosa Beach. Golden State Silk Mills; install additional dyeing and finishing equipment; also 50 new looms.

Connecticut, New London. Corticelli Silk Co.; install 150 new looms and machinery for skein dyeing.

Norwalk. Pearl Silk Co.; purchase two-story building and erect small extension.

Stonington. American Velvet Co.; install 26 new looms; award contract for new weave shed, one-story, 75 x 165 ft.

Massachusetts, Holyoke. Mabson Corp. (Paterson, N. J.); acquire former plant of Goetz Silk Mfg. Co., at S. Summer and Adams Sts., Holyoke; equip as branch plant.

New Bedford. National Spun Silk Co.; install 200 additional looms.

New Bedford. Old Colony Silk Mills Corp.; install initial equipment of 12,000 silk spindles and 144 looms in buildings acquired last year; start operations.

New Jersey, Bayonne. Roslyn Silk Mills, Inc.; move into new mill started last year and add 60 new looms.

Belvidere. Buser Silk Co., Inc. (Paterson); purchase two mills of Bamford Bros. Silk Mfg. Co. at Belvidere and remodel.

Paterson. Miesch Mfg. Co.; purchase plants of Florine Silk Co. and Mapele Silk Mfg. Co.; operate as branches.

Phillipsburg. Tilton Silk Co., Inc.; build one-story, 60 x 140 ft. extension and install 24 additional looms.

Pompton Lakes. Artistic Weaving Co.; construct one-story mill addition, 30 x 130 ft., costing about $65,000, with equipment.

New York, Brooklyn. Jas. McCurrach & Bro.; start construction of three-story addition to have approximately 5,000 sq. ft. space; install 28 new looms; will add 40 more when extension is completed.

Fort Plain. O'Day Textile Mills; purchase plant of Duffy Silk Co. and transfer machinery there; also install 2 new weaving machines and 1 warping mill.

Greene. H. H. Kurkjian, Inc.; purchase Greene Ribbon Mills; also establish branch plant at Norwich, N. Y., with about 22 ribbon looms, 3 warping, 2 winding, 16 quilling machines.

Hornell. Huguet Silk Co.; build one-story and basement addition, 55 x 95 ft.

Lyons. Jewett Silk Corp. (Clyde, N. Y.); purchase building in Lyons and equip with 8,000 spindles for branch plant.

New York. Berizzi Bros. Co., Inc., incorporate for $1,101,100; formed by merger of Berizzi Bros. Co. and A. P. Villa & Bros., Inc.

New York. General Silk Corp.; formed by merger of Klots Throwing Co. and its subsidiaries, the General Importing Co., Inc., National Spun Silk Co., General Fabrics Corp., Frieder Fabrics Co., Inc., Virginia Klots Throwing Co., Inc. and West Virginia Throwing Co.

New York. Johnson-Cowdin-Emmerich, Inc.; acquire ribbon business of Smith & Kaufmann, Inc.

New York. Edward Maag, Inc. and Lincoln Trimming Mfg. Corp.; merge.

Ogdensburg. Onondaga Silk Co. (Syracuse, N. Y.); lease plant formerly operated by Manhattan Silk Co. at Ogdensburg, for branch; install new throwing equipment.

Port Jervis. Vaucanson Silk Mills; build one-story, 90 x 96 ft. addition costing about $100,000, with equipment.

North Carolina, Greensboro. Southern Silk Mills, Inc.; add 10 looms to equipment.

Pennsylvania, Philadelphia. Eureka Silk Co.; take over machinery and equipment of Philadelphia Silk Throwing Co.

Philadelphia. Monarch Silk Co.; move to larger quarters and triple capacity by adding new machinery.

Philadelphia. Van Straaten & Havey, Inc.; erect mill addition at cost of $25,000.

Allentown. Amalgamated Silk Corp.; start construction of one-story 40 x 81 ft. addition.

Allentown. Wahler & Dilcher Silk Co.; erect new mill; two-story, 50 x 100 ft.; double capacity.

Bally. Bally Ribbon Mills, Inc.; erect one-story, 50 x 62 ft. mill extension, costing $30,000; install 10 additional looms.

Bethlehem. A. J. M. Silk Co., Inc. (Souderton, Pa.); acquire Bethlehem plant of Manhattan Silk Co., equipped with 80 box looms, 40 plain looms, etc.

Columbia. Schwarzenbach, Huber & Co.; complete three-story and basement, 58 x 209 ft. extension started last year.

East Mauch Chunk. J. P. Bennyhoff; purchase a church and convert into branch silk mill; equip with 24 box looms, 2 warpers, 4 winders and 240 spindles.

Easton. Gunning Silk Co.; construct new weave shed, one-story, 169 x 118 ft.; also boiler house, 11 x 38 ft.

Easton. Lafayette Silk Co.; move into new brick plant started last year; 20 spindles, 10 48-in. looms.

Hanover. Brilliant Silk Mfg. Co.; construct one-story plant at Hanover and transfer machinery there from Paterson, N. J.; also add some new automatic looms.

Macungie. Macungie Silk Co., Inc.; construct new mill addition; one-story, 84 x 117 ft.; add 20 new looms.

Middleburg. Middleburg Spinning Mills, Inc.; build two-story extension, 48 x 106 ft.

Muncy. Maxwell Textile Co. (Allentown, Pa.); purchase plant of Mingro Silk Throwing Co.; start operations under name of Maxwell Silk Throwing Co.

Northampton. Silverbach Silk Mill; move to new mill, 66 x 127 ft., and install 34 additional looms.

Pen Argyle. Pen Argyle Silk Co.; build one-story, 50 x 100 ft. extension.

Pittston. Kent, Mason & Emmerich Corp.; organize and take over plant of Sheridan Silk Mills Co., Pittston, and purchase one of mills formerly operated by Lewis Silk Co., at West Pittston.

Pottstown. Gudebrod Bros. Silk Co.; purchase new machinery to double capacity of dyehouse, at cost of about $10,000.

Scranton. Samuel J. Aronsohn, Inc. (Paterson, N. J.); buy Petersburg Silk Mill of Carl Schoen Silk Corp., Scranton.

Shamokin. C. K. Eagle & Co., Inc.; build

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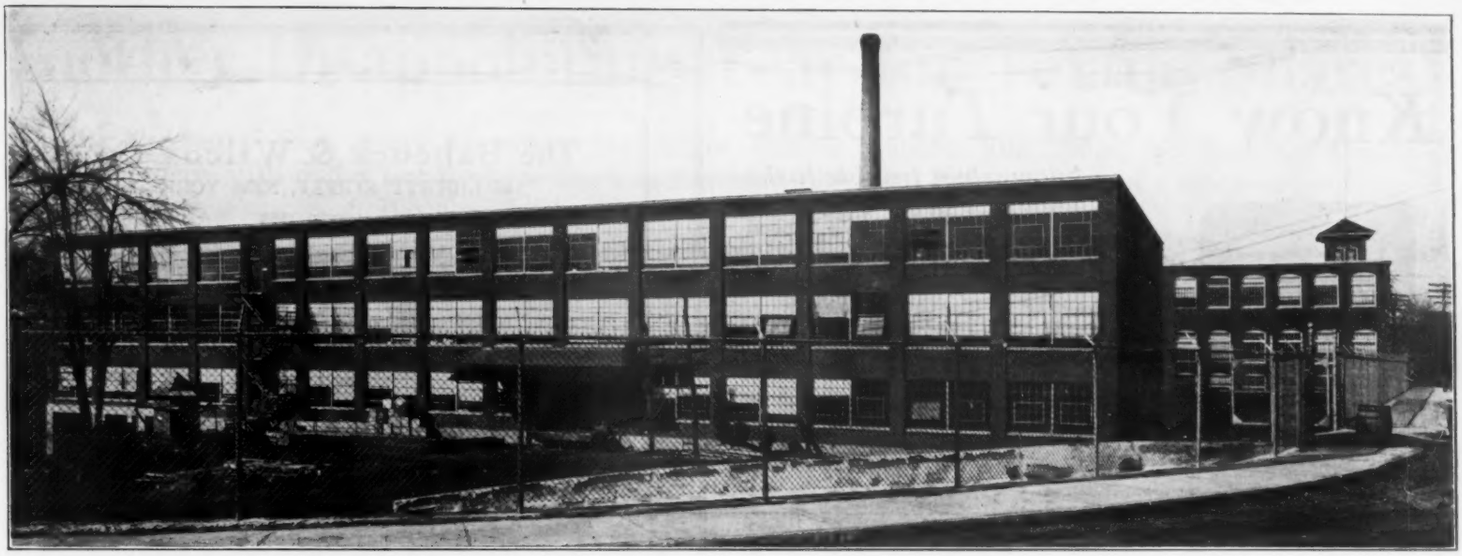

New Building of Uxbridge Worsted Co. at Uxbridge, Mass.; Used for Warp Preparation, Weaving, and Dry Finishing

dyehouse extension; one-story, 120 x 132 ft.

Shinglehouse. Oswayo Valley Silk Co.; add 10 2x1 box looms to equipment.

Stroudsburg. Monroe Silk Mills; install 20 additional ribbon looms.

Wilkes Barre. Newark Silk Co., Inc.; build two-story and basement extension, 65 x 170 ft.; equip with 24 additional looms.

Rhode Island, Central Falls. Hamlet Textile Co.; move 492 looms to plant in Pawtucket formerly occupied by Slater Yarn Co.; also add 144 new looms.

Central Falls. Mil-Mar Silk Mills, Inc.; lease 10,000 sq. ft. space for expansion.

Pawtucket. Port Morris Mills; lease space at Pawtucket and transfer all looms from mills at Allentown, Pa., and New York City to new quarters; add 44 new looms.

Valley Falls. Concordia Mfg. Co.; transfer machinery from North Adams, Mass., to larger quarters in Valley Falls; also install some new machinery.

Tennessee, Johnson City. Tennessee Silk Mill; install 2,000 additional spindles.

Virginia, Strasburg. M. E. Binz Co.; purchase Strasburg Silk Mill from Fred Bertschinger; add 28 new looms, 2 winders, 1 warper there.

Canada, St. Catharines, Ont. Grout's Ltd.; erect one-story, 124 x 220 ft. mill building.

Cowansville, Que. Bruck Silk Mills, Ltd., build one-story 200 x 70 ft. extension to dyehouse and install new silk weighting equipment.

RAYON MILLS

Connecticut, Rocky Hill. Belamose Corp.; build brick mill addition, one-story high, 40 x 142 ft.

Maryland, Amcelle. American Cellulose & Chemical Mfg. Co.; build 1½ story, 160 x 250 ft. addition at cost of $200,000, with equipment.

New Jersey, Clifton. Napon Rayon Corp.; complete changes and build-two-story, 90 x 100 ft. addition to plant of Cupra, Inc., acquired last year; start up first unit; capacity 1,500 lbs. rayon per day.

New York, Brooklyn. U. S. Rayon Corp. (New York); purchase plant of Herman Rick Co., Inc. and add 15 ribbon looms; also rent remainder of building and install winding equipment.

Buffalo. Du Pont Rayon Co.; complete new 8,000,000 lb. unit started last year.

Utica. Skenandoa Rayon Corp.; complete improvements to plant acquired last year; install machinery and start production.

Whitestone. Tex-O-Ray Corp.; succeed to business of K & G Textile Co. and Stanley Textile Corp.

Ohio, Cleveland. Acme Rayon Corp.; erect one-story and part basement mill addition, 30 x 110 ft.

Pennsylvania, Philadelphia. Rayon Fibre Products Co.; purchase Chester (Pa.) Art Silk Co. and transfer machinery to Phila. where add 3,000 sq. ft. to space; install 4 new combs.

Lewistown. Viscose Co.; erect new power building; 62 x 95 ft.

Tennessee, Johnson City. American Bemberg Corp.; complete first unit of plant started last year; production about 6,600 lbs. per day.

Old Hickory. Du Pont Rayon Co.; complete expansion program.

Virginia, Roanoke. Viscose Corp. of Virginia; complete $5,000,000 unit started last year.

West Virginia, Parkersburg. Viscose Co.; proceed with construction of branch started last year; total expenditure about $5,000,000.

MISCELLANEOUS MILLS

Alabama, Birmingham. Perfection Mattress & Spring Co.; erect new three-story, 80 x 112 ft. plant.

Lanett. Lanett Bleachery & Dye Works; construct new waterproofing building, 60 x 100 ft., at cost of about $75,000, with equipment.

California, San Francisco. Tubbs Cordage Co., Inc.; erect reinforced concrete storage and distributing building, costing $14,000, to replace one destroyed by fire.

Connecticut, Jewett City. Aspinook Co.; build three-story addition for laboratory purposes.

Winsted. Strand & Sweet Mfg. Co.; build two-story, 50 x 80 ft. brick mill addition at cost of $40,000.

District of Columbia, Washington. Eagle Bedding Co.; construct new two-story plant.

Georgia, Flintstone. Yates Bleachery Co.; double capacity.

Illinois, Chicago. Independent Felting Co.; start construction of new two-story and basement, 85 x 125 ft. mill.

Kentucky, Louisville. Ohio Falls Dye & Finishing Works, Inc.; construct three-story, 70 x 160 ft. extension.

Massachusetts, East Dedham. Dedham Finishing Co.; build additional story, 50 x 150 ft., at cost of $30,000.

Millbury. Nortex Mfg. Co.; capitalized at $200,000; take over Norrie Mills and install some new machinery.

Southbridge. Southbridge Finishing Co.; purchase assets of Southbridge Printing Co.; install additional machinery.

Michigan, Grand Rapids. National Felt Corp.; capitalized at $100,000; succeed to business of Lansing Felt & Mattress Co.; establish plant at Grand Rapids.

New Jersey, Fairlawn. Masson Dyeing Co., Inc.; extend and improve plant acquired last year; install additional machinery.

Hawthorne. Textile Dyeing Co. of America, Inc.; approximately double capacity of plant; additions one-story, 150 x 100 ft., and two-story, 200 x 100 ft.

Newark. Hart Dyeing Co.; build one-story, 25 x 50 ft. extension and add machinery to increase production one-third; purchase plant at Blanchard & Ferry Sts., formerly occupied under lease.

New Brunswick. Lyons Piece Dye Works; complete branch plant started last year.

Paterson. Cramer & King Co.; build one-story, 70 x 115 ft. extension to plant at cost of $100,000.

Paterson. Keystone Piece Dye Works; erect one-story dyehouse, 50 x 250 ft., costing $12,000, exclusive of equipment.

Paterson. Paterson Silk Dyeing Co., Inc.; buy former plant of Gautschy Silk Dyeing Co. and transfer equipment to that plant; also add new machinery to approximately double capacity.

Paterson. Shindel Silk Corp. (Mt. Carmel, Pa.); establish dyehouse in Paterson.

Paterson. Strengs Piece Dyeing & Finishing Co.; erect frame addition, 50 x 75 ft.

Paterson. United Piece Dye Works (Weidmann Division); start construction of two-story, 60 x 200 ft. extension.

Paterson. Washington Piece Dyeing & Finishing Co.; construct one-story, 50 x 95 ft. dyehouse addition.

New York, Brooklyn. Marien Dyeing & Finishing Co., Inc.; formed by consolidation of Sterling Piece Dye Works and Umans Dye Works; combined capacity 100,000 yds. daily.

Little Falls. Little Falls Fibre Co.; purchase cotton mill and warehouse of Phoenix Mills, Little Falls.

Minetto. Columbia Mills, Inc.; construct four-stay, 209 x 42 ft. building for hand painting department; also two-story, 225 x 45 ft. storehouse.

New York. American Shrinkers Corp.; formed by merger of plant of Morris Garfunkel and Benjamin S. Moss & Co., Inc.

North Carolina, Biltmore. Sayles-Biltmore Bleacheries; complete new plant; buildings four-story (main plant and auxiliary buildings); transfer machinery in Depts. D1 and D9, Saylesville, R. I., to Biltmore.

Charlotte. Southern Specialty Co. (Salembier & Villate, Inc.); begin operation of new processing plant. (Construction started last year.)

Icard. Icard Cordage Co.; build addition to house new cotton spinning and preparatory equipment.

Spindale. Elmore Co.; install new steam power plant and caustic recovery plant.

Tryon. Southern Mercerizing Co.; build one-story and basement, 60 x 60 ft. wing; install 24- pole mercerizing machine, 16 winders; 500 spindles winding equipment; construct several new cottages.

Ohio, Cincinnati. Johns-Manville, Inc.; acquire plant, remodel and equip as branch at cost of about $500,000.

Oregon, Salem. Miles Linen Co.; install 100 additional spindles; Miles interests sell their stock to Thos. B. Kay, Henry W. Meyers and Carl Nelson.

Pennsylvania, Philadelphia. Clarence F. Arnold & Co.; purchase large part of machinery of Phila. plant of H. W. Walliser & Co. for rug and upholstery fringes.

Philadelphia. J. R. Foster & Sons; erect addition, costing $60,000.

Philadelphia. Frankford Dyeing Co.; add new equipment for handling spun rayon yarn; enlarge drying and finishing departments.

Philadelphia. Globe Dye Works Co.; construct four-story and basement, 100 x 50 ft. building for warehouse and winding department; also one-story, 250 x 50 ft. dyehouse.

Philadelphia. Hellwig Silk Dyeing Co.; build two-story 125 x 40 ft. extension, costing $36,000; also four-story and basement, 45 x 85 ft. addition, at cost of $70,000.

Philadelphia. Hoffner Silk Dyeing Co.; acquire twisting and reeling machinery for throwing rayon formerly operated by B. Hooley & Son, Inc.

Philadelphia. Walter E. Knipe & Sons; build one-story, 130 x 80 ft. addition and increaes capacity on skein and raw stock dyeing.

Philadelphia. Linear Packing & Mfg. Co.; install 28 additional braiders.

Philadelphia. Merit Dyeing Co.; take over plant formerly operated as Bud Silk Hosiery Dyeing Co.; buy additional machinery.

Philadelphia. Northern Silk Dye Works, Inc.; capitalized at $75,000; formed by merger of F. A. Tomalino Silk Dye Works and Germantown Silk Dye Works.

Philadelphia. Park Dyeing Co.; purchase equipment of Chas. Christos and move to Belgrade & Ontario Sts.

Philadelphia. A. M. Townson & Co.; purchase plant of Andrew's Mill Co. and start dyeing, finishing and printing.

Rhode Island, Central Falls. Priscilla Braid Co.; purchase plant at Central Falls, formerly occupied by Glenlyon Yarn Dye Works, for expansion.

Cranston. Helliwell & Hyde Mfg. Co.; succeed to business of Barwood Co., Providence; establish plant of 400 machines at Cranston; make elastic and non-elastic webbing and braids.

East Greenwich. A. H. Esten; build new dye and boiler house; one-story, 120 x 40 ft.

East Greenwich. Hill & La Cross Co.; purchase Mill No. 2 of Elizabeth Mills Corp., remodel, and transfer machinery there from Providence plant; add 400 braiders.

Providence. Queen Dyeing Co.; construct one-story, 75 x 137 ft. bleachery.

Providence. U. S. Finishing Co.; erect new office building.

Woonsocket. Crown Piece Dye Works, Inc.; organize to take over and operate Quality Piece Dye Works; renovate plant and install some new machinery.

Woonsocket. Fairmount Dye Works, Inc.; build one-story storehouse; install 2 new winders.

Tennessee, Chattanooga. Central Franklin Process Co.; complete plant started last year; 41,000 sq. ft. floor space.

Virginia, Norfolk. Atlantic Jute Mills; construct one-story, 250 x 62 ft. building at cost of about $22,500.

Washington, Vancouver. Pacific Coast Linen Mills; organize and take over machinery and equipment shipped to Vancouver for Washington-Oregon Linen Mills; about 1,500 spindles.

Wisconsin, Milwaukee. Schmidt Bedding Co.; construct new mill building; two-story, 30 x 123 ft., costing $15,000.

Canada, Toronto, Ont. Dickinson Dye Works, Ltd.; construct two-story addition and install new screen printing equipment.

Hosiery Mill Increases

Erect Addition Planned for Future Enlargement

Early in 1926, the Concordia Silk Hosiery Co. decided to enlarge the plant at A and Cortlandt Sts., Philadelphia. The new building is about 108 ft. wide and 100 ft. deep, with a basement, first and second floors. Provision has been made so that a future third floor can be built without disturbing the work in the mill. The old and new buildings have a total floor area of approximately 40,000 sq. ft.

The construction is fireproof and columns are placed 40 ft. apart to give proper room for machines. All sash is metal; floors are of hardened cement; and the entire interior is painted white, which with the large windows on both front and rear gives an abundance of light. The building is heated by a vacuum system, using two boilers burning oil. These are of sufficient capacity to take care of future extensions.

The interior partitions, tables, and other equipment are of metal, and the machines are lighted by means of long reflectors over the entire length of each machine. Machines are operated individually by electric power.

The following Philadelphia contractors were employed on this building: Harry H. Wehmeyer, general construction; Landau & Bradford, plumbing; Elias Nusbaum & Bro., electric work; H. G. Vogel Co., sprinkler system. Edgar A. Wightman, Philadelphia, was the architect-engineer in charge of the design and construction; and the Elevator Engineering Co. furnished electric elevator.

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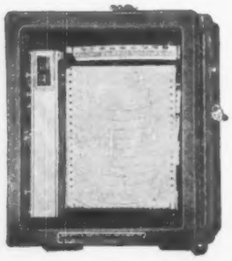

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DALLAS, TEXAS, 2001 Magnolia Building
DENVER, 444 Seventeenth Street
SALT LAKE CITY, 405-6 Kearns Building
SAN FRANCISCO, Sheldon Building
LOS ANGELES, 404-406 Central Building
PORTLAND, ORE., 805 Gasco Building
SEATTLE, L. C. Smith Building
HAVANA, CUBA, Calle de Aguiar 104
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HONOLULU, H. T., Castle & Cook Building

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Another Disappointing Year for Textile Shares

For Third Successive Year Heavy Inventory Shrinkages Reduce Cotton Mill Profits or Increase Losses—Southern Mills Suffer Relatively as Much as Northern—In Wool Industry Lack of Dress Goods Business Spoils Otherwise Good Men's Wear Year

FOR the third year in succession cotton and wool mills have suffered serious losses as a result of inventory shrinkage, that for cotton being more drastic than for either 1924 or 1925, while that for wool was a little less than for either of those two years, although serious. The silk industry, which suffered but little from inventory shrinkages due to a decline in raw material prices during 1924 and 1925, was subjected to almost as serious losses as the wool industry from this cause in 1926. The drop in cotton prices from January to December averaged 39% and was much greater in the interim; wool and silk during the same period declined approximately 18%, but there was a moderate advance in wool during the last six months of the year.

This factor, and overproduction or under-consumption, were the causes of declines in textile security values that were common to the majority of mills in these three industries, and in addition there were other depressive factors that affected only one industry or certain sections of an industry.

In the cotton industry there was a marked decrease in the demand for novelty fine-count fabrics and a strong trend toward plain goods for printing that tended to restrict profits for the former mills. Spinners producing combed yarns also had a most unsatisfactory year, this being partially due to the competition of rayon. Northern cotton mills felt southern competition more keenly than at any time since the southern branch of the industry became a dominant factor.

Of depressive factors peculiar to the wool industry, one of the most important was the continued narrow demand for dress goods, owing to the limited yardage used by women and to the competition of silk; as a result dress goods mills competed with men's wear mills for business which legitimately belongs to the latter and this competition spoiled a business that otherwise would have been satisfactory and fairly profitable. At no time during the year was there a satisfactory margin of profit for top-makers and worsted yarn spinners, and during a greater part of the time they operated at a loss, if at all.

For silk manufacturers, inventory shrinkage due to the decline in the raw material was less disastrous than the shrinkage that had to be taken on woven-patterned novelties that were produced in excess of demand at profitable prices. Being essentially a novelty season, mills equipped for producing only plain goods operated generally at low capacity and correspondingly high costs.

In the knit goods trade the majority of full fashioned and seamless hosiery mills operating upon silk goods for women and men had a very satisfactory, and in some cases, highly profitable business; the same was true of a few mills making novelty lines and of underwear mills making silk and rayon goods for women. Business on staple lines of hosiery and underwear was narrow and generally unprofitable.

The carpet and rug mills started the year well, but with the decline in building operations during the last half year curtailed production became necessary and for the twelve months many mills did no better than to break even.

The Worst of Last Three Years

Two years ago the opinion was expressed in these columns that those mills which had stood the acid test of depressed conditions during 1924 ought to prove a safe and profitable investment. That prediction was proved false by the experiences of 1925. A year ago the opinion was expressed that almost any of the textile mill stocks then available at bargain prices ought to show a handsome profit eventually; but nothing that happened in 1926 has substantiated that prediction. In the accompanying table is a list of seventeen New England textile stocks which, at the time the tabulating of their comparative values was started about ten years ago, were all regarded as being in the "gilt-edged class." They include five mills making wool goods wholly or in part, and twelve cotton mills whose product was then fairly representative of the average of New England production. This list was compiled with the idea that it would prove barometric of New England textile security values, and with the possible exception of fine count cotton mills it has justified this assumption.

New Lows for 1926

Several mills originally listed have been eliminated because they have been reorganized or have gone out of business. Two of those still listed are now out of business and two others are facing reorganization or liquidation. With two exceptions every stock on the present list sold below its low for 1925; those exceptions are Merrimack common and Pepperell, the former having touched a low of 75¼ in 1925 and of 98¼ in 1926, and the latter touching 107 in 1925 against 110⅛ in 1926. Only one of these stocks sold during 1926 above its high for 1925 and showed a net advance December 31 on its price of December 31, 1925, this being Merrimack common, which sold as high as 115 during the year and closed at 112¼ December 31, as compared with a high in 1925 of 112.

Moderate Recent Advance

The seventeen mills on the list showed a gross decline for the year of 389 points, or an average of 22.88 points, while from the highs of 1923 they show an average decline of 75.2 points. The only encouragement to be gained directly from this list is the fact that twelve of the stocks on December 31 showed a moderate advance from the lows of the year. This is doubly encouraging in view of the fact that during the last three or four months investors have been discouraged by the repeated publication of mills' statements showing on the average more or less heavy losses for their fiscal years ended during the latter part of 1926, and also by news of actual or threatened liquidations owing to continued poor business. These have been accompanied by news of dividends passed or reduced.

During all this period the trend of values on the list has been quite as barometric of that of Fall River stocks, and during 1926 it has been equally barometric of the course of average values of New Bedford and southern cotton mill securities. Average values of New Bedford and southern mills are considerably higher than those of this particular list, but the actual and percentage declines from the highs of 1923 have been quite as radical.

Were Inventories Over-Shrunk?

In attempting to forecast the outlook for cotton mill securities during 1927 there are several factors that deserve close scrutiny, and none more so than inventories, physical condition of plant, management and merchandising. First, however, it might be just as well to eliminate mills that are facing or passing through liquidation. Some of these mills will offer attractive speculative opportunities when re-organization is completed, but in the meantime there is a sufficient speculative element in the securities of mills that are going concerns to satisfy the average investor.

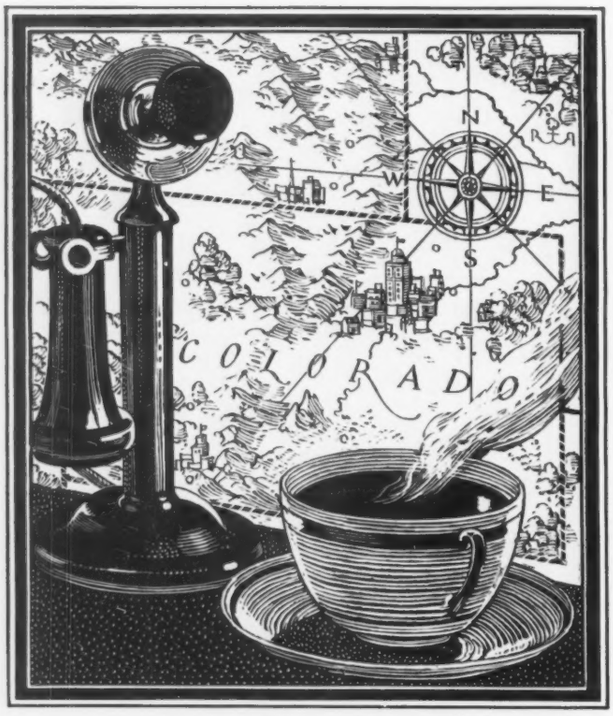
The point that we wish to emphasize regarding inventory shrinkages is that there has been ample excuse to cut them to the bone and there is ample evidence that the majority of mill officials have not hesitated to stick the knife in deeply. Many of them had other than inventory losses to cover up, and there was no more convenient or justifiable medium than inventory shrinkage. It was justified because of the radical decline in cotton, yarns and cloths, and for mills that bought most of their cotton early at low prices there was a considerable margin to the good between "cost and market" at the time inventories were shrunk. Furthermore, manufacturers are proceeding upon the assumption that cotton has touched bottom for a long time to come and that it will not be a case of inventory shrinkage at the end of

COMPARATIVE VALUES OF TYPICAL NEW ENGLAND TEXTILE SHARES 1914 AND 1919 TO 1927, SHOWING HIGHS AND LOWS FOR EACH YEAR

	1926			1925			1924		1923		1922		1921		1920		1919		1914	
	Dec. 31	High	Low	Dec. 31	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	Low	July
American Woolen, pfd	86½	90	67½	88½	96	74	102½	92¼	118⅜	97	111⅜	102	104	91	105¼	92	109½	94⅛	73⅝	74¼
Amoskeag, com	52	71	48½	70	84½	62	80	60¼	112	67½	117	106	104	†72	*167	75½	150	89	58½	62
Androscoggin	43½	53½	43½	125	132	125	145	132	116½	100⅛	141	119	12-	†119	*225	193¼	193¼	186	135½	137
Arlington	67	95	67	98⅞	104¼	90⅝	106¼	99⅞	175	142¼	114½	90½	109	90½	172⅜	109	141¼	109	74½	80
Bates	118	155	118	190⅝	233¼	190⅝	235½	210	263	235¼	273	190⅛	211⅜	183	315⅛	195	273	255	213¼	213¼
Bigelow-Hartford, pfd	80⅛	101½	73	101	105	100	†114½	102½	†110¼	114¼	119¼	93¾	122⅛	93¾	111	93	100	83¼		
Great Falls	10	19⅛	6	19⅛	24½	12	37	23½	77½	33½	120⅛	75⅜	147½	119½	241	131	219	177	168	170⅝
Hamilton Mfg	55c	5⅝	25c	4¾	54	4¾	54	41	85	46½	92½	63	120	†70	*187⅝	140¾	155	109	75	75
Lyman	112½	120	112½	116¼	142¼	116	166½	142¼	183⅛	166⅛	186½	162½	180	161⅛	190½	175	170½	132	†12	120
Mass. Cotton	71	77	48½	77	130⅜	72¾	149	125	174½	149	158½	146	148¼	132⅞	167⅜	132½	145	118	115½	116
Merrimack, com	112¼	115	98¼	100⅛	112	75¼	112	99⅜	107⅞	100½	104½	90¾	102	74	125½	100	117	66⅝	24½	24⅝
Nashua, com	42¼	60¼	40	60	73¼	60	85½	69	79	71¼	85	73	109½	†85	*260¼	105¼	310	†230	630	672½
Naumkeag	115½	182	145¼	186	203	180¾	195	164¼	*315	255	260¼	210¼	208	189¼	241½	195	222¼	163	172	172
Pacific	42	51	35½	53	81¼	51	86½	71	100	†84	†190	159	170	147	175	†160	*190	150	106	110
Pepperell	113¾	141	110⅛	134¼	142	107	142½	108	167½	134	180	164¾	202	178	220	200	210	188	290	305
Tremont & Suffolk	26⅛	47½	25½	43¼	108⅞	43⅛	139½	75	155½	100	165½	135	190	125	281	190	280¼	157½	100	100⅜
York	31⅛	56½	31	55	112¾	55	125½	103⅜	230	120¼	220	195	225	195	226	133½	190	110	85	85

* Old stock. † New stock.

Coffee *by Long Distance* $10,963.20 worth



A COLORADO COFFEE COMPANY devised a new container for its product. On one side appeared the name of the brand, on the other the word "sugar," "corn-meal," "salt" or some other commodity for which the can could later be used. Here was an idea likely to appeal to housewives. What was needed was quick distribution. They got it—by Long Distance. Telephone calls to 19 dealers in 9 states got 18 orders for 27,128 pounds of coffee. Later, the 19th dealer bought as a result of the call.

WHENEVER ACTION is important, we suggest long distance calls. Compare the charges with what it would cost to send representatives in person. Compare the number and size of the orders and compare the time required.

Hundreds of businesses are now using the telephone over states and over trade territories as they formerly used it locally. There are no county or state lines to the telephone, in buying and selling goods; in making appointments; in closing transactions. In saving time and money. What concern would it pay to call now, in the next state or across the continent? The cost of a long distance call is usually less than you'd think. . . . . *Number, please?*

BELL LONG DISTANCE SERVICE

their next fiscal years, but of inventory advances that may, or may not, cover up hidden profits as was the common custom in mill financing in the good old days when wide profit margins were a normal condition. As a general rule, therefore, investors may feel perfectly sure that there is nothing in the inventory items of well-managed cotton mills to endanger their investments.

The status of inventory items of a majority of woolen and worsted mills is similar, and silk manufacturers can be depended upon to adopt a similar policy to the extent that recent declines in raw silk and its manufactures coincide with the date of the closing of their fiscal years.

The strenuous competition of the last three years has subjected cotton and wool mills wherever located to the acid test and those that have come through this period with plant in good physical condition and with an adequate amount of working capital are all the stronger for having been subjected to this test. Given mills that are in good physical condition and have sufficient working capital, then their future prosperity rests to a very large extent upon the character and efficiency of their management and merchandising. It is not safe to assume that all of those mills that have experienced hard times during the last three years are equally well managed and merchandised, but it is possible to learn of outstanding examples, and certain of the latter that are receiving most favorable comment are to be found in New England. This is not strange, for northern mills have had a more protracted test than have southern mills, and for a longer period have faced the necessity of adopting extreme measures to meet competitive conditions and continue in business. Whether located North or South, however, these are tests that will need to be applied by investors who are seeking safe and promising textile investments.

It is also to be noted that many northern mills and some southern mills could be placed upon a dividend paying basis if half of the taxes now paid to municipalities, counties and States were remitted. In New England and in North Carolina manufacturers are endeavoring to awaken the public to this need, and it is reasonable to assume that it will prove effectual in some instances.

The Outlook

It may be inferred from what has been written that careful discrimination is necessary in selecting textile investments, but that there are many textile mills that are in far better position to take advantage of any substantial improvement in business volume than has been their status at any previous period since 1923. In a general way it may be stated that most mills that made money last year are in a position to make more money during 1927; this is particularly true of cotton mills which are now in a position to take advantage of the present low raw material prices. Wool is relatively higher than cotton, but values appear to be stabilized and those mills which are able to secure a larger volume of business should be able to show relatively larger profits than in 1926.

HIGH AND LOW ON NEW BEDFORD STOCKS

(From Sanford & Kelley)

	—1926—		—1925—	
	High	Low	High	Low
Acushnet	90	70	100	72½
Beacon pfd	100	85¼	100	94
Booth com	No Sales		No Sales	
Booth pfd	114	94	106	105
Bristol	175	100	192½	147
Butler	116½	47½	137½	110
City Mfg	111	95	140	95
Dartm'th com.	141½	101	160	138½
Dartm'th pfd.	87	85	86½	85
Fairhaven com.	1	1	30	1
Fairhaven pfd.	20	1	54	12½
Gosnold com.	65	10	95	54⅞
Gosnold pfd.	81	20	86	60
Grinnell	101	58	123	99
Hathaway	115	95	119	105
Holmes com.	100	45	145	90
Holmes pfd.	87½	60	102½	90
Kilburn	135	103	157	110
Manomet	37	9½	51½	27½
Nashawena	110	69	132	104½
Neild	160	140	240	210
N. B. Cot. com.	No Sales		No Sales	
N. B. Cot. pfd.	87½	83	100½	98¼
Nonquitt	61	30	80	47½
Pierce Bros.	No Sales		No Sales	
Pierce Mfg.	425	315	455	425
Potomska	94	54	110	80
Quissett com.	141	95	185	132½
Quissett pfd.	95	94	97x	96x
Sharp com	36	10	53½	34
Sharp pfd	61	23¼	77	55
Soule	183	142	197½	170
Taber	106	83	112½	100
Wamsutta	97	48	100	79x

New Bedford Awaits Improvement

Goes Through One of Worst Years of Its History—Many Mills Passed Dividends—New Laws on Stocks

From Our New Bedford, Mass., Correspondent

THE year of 1926 for the cotton manufacturers of New Bedford was in many respects the worst they have experienced, and mill men generally are hoping that 1927 will witness the end of the depressing conditions that have obtained in the textile industry during the last five years. Among the salient features of the past year might be mentioned the passing of dividends by more mills than at any other time in the history of New Bedford's mills, setting of new low marks by many of the mill stocks, and establishment of a new low average dividend rate at slightly less than $4 for the year.

Slump in Dividends

For four years, many of the cotton mill corporations maintained dividend rates out of surplus funds, hoping against hope that the tide would turn with a return to profitable business. These hopes were not realized, and in some cases it was necessary to pass up dividends rather than disburse a yield that had not been earned. As a result of the careful business methods of the mill executives, there was a decided reduction in the amount paid out in dividends compared with 1925, the total distributed being $2,904,434 on a total capitalization of $72,698,700, compared with the $3,924,120 in 1925, or a decrease of $1,019,686. When it is taken into consideration that the average dividend rate for New Bedford cotton mills for the last 10 years, from 1917 to 1926 inclusive, is $12.55, one can form an idea of how New Bedford was affected by the depression. Despite this somewhat dismal reading, deposits in savings banks of New Bedford increased during 1926 by $3,396,998, compared with an increase of $1,758,241 in 1925, being as a matter of fact higher than the banner year of 1920. The number of depositors was increased by 2,557.

An increase of 536 spindles was noted during the year, bringing the present spindleage to 3,492,478, while the number of looms was increased by 101 to 56,249. A slight gain was also registered in the number of employes, making the total employed in the cotton mills of the city 39,670. A considerable decrease in building operations was noted throughout the city, this being particularly true in the textile industry. A new weaving shed was erected for the New Bedford Cotton Mills at an estimated cost of $100,000, while the Kilburn Mills erected a storage warehouse and the I. L. Marrow Co. is completing an addition to its textile plant, to cost around $30,000.

Most Active Stocks

Trading in cotton mill shares, while maintained at a steady volume throughout the year, did not reach the proportions of 1925. The most active stocks were Manomet and Sharp common, these being followed by Wamsutta. As was to be expected with the passing of dividends by some of the corporations, shares fluctuated to a considerable extent, the decline ranging all the way from $2 to $110 per share. No less than 13 stocks sold during 1926 at the lowest figure they have touched, despite the fact that with one exception they all show a surplus of quick assets over liabilities.

During 1926 there was a net decrease in the capital invested in New Bedford cotton mill corporations of $1,330,200, this being accounted for largely by the retirement of capital stock called in for cash. The total capital now outstanding on all the New Bedford cotton mills is $72,698,700. Figured on statements available at the time this was written, the total surplus in net quick assets amounted to $36,135,834, or approximately one-half of the invested capital, showing the strong financial position of the corporations as a whole.

Maintains Dividend of $32

The Pierce Mfg. Corp., with its comparatively low capitalization of $600,000, was able to maintain its regular $32 yield for the year, this excellent rate accounting for $192,000. The Pierce was one of the few corporations that kept its capital stock down to the same amount when many of the others were disbursing stock dividends in 1922, with the result that high distributions have been possible even during the years of depression. At the present time the plant has a surplus of net quick assets over liabilities amounting to $2,200,000, and the present market value of the shares is less than these quick assets, despite the exceptional earning capacity of the plant over a number of years.

Many Pass Dividends

A number of corporations that had managed to maintain dividend disbursements up to and including 1925 decided against that policy during 1926, rather than draw on reserve funds for a continuance of dividends that had not been earned. Thus for the first time in the history of the organizations, a number of them failed to make any returns during part or the whole of the year. Butler paid $2 in the first quarter, but passed up the other quarters. Fairhaven, both common and preferred, along with Gosnold common and preferred, and Sharp common and preferred, were all barren so far as disbursements were concerned.

Booth common passed its dividend

NEW BEDFORD DIVIDENDS 1926

(From Sanford & Kelley)

Corporation	Capital	Rate	Amount
Acushnet	$2,000,000	6	$120,000
Beacon com	1,200,000	6	72,000
Beacon pfd†	1,269,800	6	76,188
Booth com	852,800	0	.....
Booth pfd	344,100	6	20,646
Bristol	1,000,000	8½	85,000
Butler	2,300,000	2	46,000
City Mfg	750,000	6	45,000
Dartmouth com.	‡3,600,000	8‡	296,000
Dartmouth pfd.	600,000	5	30,000
Fairhaven com.	1,500,000	0	.....
Fairhaven pfd.	2,000,000	0	.....
Gosnold com	1,650,000	0	.....
Gosnold pfd	1,650,000	3	49,500
Grinnell	1,500,000	3	45,000
Hathaway	*1,600,000	6	*108,000
Holmes com	600,000	4	24,000
Holmes pfd	600,000	6	36,000
Kilburn	2,250,000	8	180,000
Manomet	8,000,000	0	.....
Nashawena	7,500,000	7	525,000
Neild	1,200,000	12	144,000
N. B. Cot. com.	1,050,000	§	.....
N. B. Cot. pfd.	750,000	6	45,000
Nonquitt	4,800,000	0	.....
Pemaquid com.	300,000	....	.....
Pemaquid pfd	750,000	....	.....
Pierce Bros.	700,000	§	.....
Pierce Mfg.	600,000	32	192,000
Potomska	1,800,000	0	.....
Quissett com	2,000,000	8	160,000
Quissett pfd	305,000	6	18,300
Sharp com	2,656,000	0	.....
Sharp pfd	1,161,000	0	.....
Soule	1,260,000	8	100,800
Taber	1,600,000	6	96,000
Wamsutta	6,000,000	5	300,000
Whitman	3,000,000	3	90,000
	$72,698,700		$2,904,434

*Retirement of capital July 1, 1926, to $1,600,000. First two quarters paid on $2,000,000. Last two quarters paid on $1,600,000.

†Beacon pfd. now $1,283,000.

‡Retirement of capital. First quarter paid on old capital of $4,000,000. Last three quarters on new.

§Inasmuch as the dividends are not made public on N. B. Cotton Mills Corp., Common Stock on capital of $1,050,000; Pierce Bros. Ltd. on capital of $700,000; total $1,750,000, they are not considered in determining the average dividend for the year.

The dividends paid by New Bedford cotton manufacturing corporations in 1926 on $72,698,700 capital amounted to	**$2,904,434**	**4 %**
There was paid in 1925 on $74,028,900 capital	**3,924,120**	**5-30/100%**
A decrease of	**$1,019,686**	**1-30/100%**

GRAHAM BROTHERS TRUCKS

Yearly sales of Graham Brothers Trucks are shown in the table below. It begins with 1921 and goes through 1926.

1086

3401

6971

10743

23884

37463

This steady growth is complete and convincing proof that the public has recognized the superior value in Graham Brothers Trucks.

Graham Brothers Trucks and Commercial Cars meet 91% of all hauling requirements.

GRAHAM BROTHERS

EVANSVILLE · DETROIT · STOCKTON

A DIVISION OF DODGE BROTHERS, INC.

GRAHAM BROTHERS (CANADA) LIMITED, TORONTO, ONTARIO

¾-TON COMMERCIAL CHASSIS	$ 670
1-TON TRUCK CHASSIS (G-BOY)	885
1½-TON TRUCK CHASSIS	1245
2-TON TRUCK CHASSIS	1445*

*Disc Wheels With Dual Rear, Optional.
Prices f. o. b. Detroit

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DODGE BROTHERS
DEALERS EVERYWHERE

in all four quarters. Grinnell, after paying $1.50 in the first quarter, joined the ranks of the non-paying plants. Holmes common paid $1.50 in the first and second quarters, $1 in the third, then failed to meet its obligations in the fourth quarter, for the first time since it started paying dividends. Manomet, Nonquitt and Potomska stockholders were also without returns for the year. Whitman disbursed $2 in the first quarter, $1.50 in the second, but failed to make any return in the last two quarters.

Wamsutta reduced its dividend from $1.50 paid in the first two quarters to $1 for the third and fourth quarter. Bristol paying $3 in the first quarter, reducing to $2 in the second and third, and cutting the yield to $1 in the final quarter. Nashawena paid $2 in each of the first two quarters, and $1.50 in the third and fourth quarters. Dartmouth common, Kilburn and Quissett maintained their regular rates of $2 for each quarter, Neild paying the regular of $2 and $1 extra in each quarter. In the case of Dartmouth, the capital stock was reduced from $4,000,000 to $3,600,000 for the last three quarters.

The selling system of some of the mills came under scrutiny during the year, followed by a change at some of the plants. At the Whitman Mills, the selling agents, Harding, Tilton & Co., agreed to concentrate their efforts on the merchandising of the plant's products, and present indications point to an improvement over the last few years, with hopes that the mill will soon be in a position to return to a dividend basis. At the Gosnold plant, which some years ago took over the Page Mfg. Co., where a large quantity of rayon is used, the corporation was hard hit by the big drops in raw material, and it was necessary to pass the dividend on the preferred stock. Some time ago the selling agents, Harding, Tilton & Co., resigned as distributors of the firm's products, Charles L. Harding resigned as president, and Charles M. Holmes as treasurer. At the same time, it was decided to place the Page plant on sale, in order to acquire capital to ease the situation at the Gosnold. Mr. Holmes was desirous of being relieved of his executive position at the Gosnold in order that he might devote more time to a similar position of treasurer at the Holmes Mfg. Co.

Dartmouth Maintains Rate

Despite the fact that the Dartmouth Mfg. Co. had a strike of operatives that practically closed down the plant for several weeks, the regular rate of dividend of $2 per quarter was maintained. At the plant, 10% of the capital was called in, amounting to $400,000 and reducing the capital stock to $3,600,000. In spite of the strike having affected the plant to a considerable extent just as an improvement in business had been noted, it is expected that the corporation will have made a creditable showing for the past fiscal year, and may be one of the few cloth mills of the city to show a profit after depreciation and adjustment of inventory.

Hathaway was another plant where a part of the stock was called in, 20% being purchased from shareholders at par of $100 per share, this accounting for $400,000. The corporation was able to show a big reduction in inventory. The plant made an excellent showing under the adverse conditions, the net quick surplus of assets being reduced by less than $300,000, after allowing for the payment of dividends and the purchase of the capital stock called in.

At the time this is written, the mill men are in a position to view the coming year with a great deal more optimism than prevailed a few weeks ago, and hopes are entertained that the worst of the depression has been seen for some time to come.

Fall River Mills More Optimistic

But Improvement Will Have to Come Early to Help Some—13 Out of 36 Continued Dividend Disbursements in 1926

From Our Fall River, Mass., Correspondent

FALL RIVER, like other textile centers in New England, has seriously felt the textile depression of the last year, yet her mills are now considerably more optimistic as to the future though all may not be able to continue operations long enough to profit through improved conditions unless they materialize early in the year. Only 13 of the 36 mills whose dividend rates are made public, continued dividend disbursements during the year; two were bid in by the city on tax liens and one run out all stock in process early in the summer and shut down.

Different methods have been taken by different corporations in the course of the year to better their condition yet no outstanding betterment has been achieved up to this time. A change in management was made at several of the mills; others installed new machinery to enable a change in style of goods; different methods of selling the out-put were tried and two of the smaller corporations combined. No help was afforded the struggling corporations by the city as might have been done by a reduction of taxes. Help along the latter line is looked forward to in the present year in view of a change in municipal control.

The year brought about no great change among the mills as a whole from the previous year. The mills that paid dividends in 1925 continued practically the same rates last year without drawing upon their reserve funds to any great extent and with possibly four exceptions the others are not much worse off than at the close of 1925. The most noticeable exceptions are in the case of the Granite Mills and the Stafford Mills. The latter opened up under new management after a long shut-down and it now has a debt instead of the $200,000 surplus shown upon re-opening.

In the case of the Granite, where a change in management was also made, a loss of approximately $350,000 was suffered during the year. Untimely buying of cotton is believed largely responsible for the loss at the Granite while installing of new machinery, building up an expensive administrative department and starting up after a long period of idleness all contributed to the poor showing at the Stafford. The Seaconnet Mills had been turned over to its creditors at the opening of the year and the Conanicut Mills were petitioned into receivership early in the year. Both of these mills were bid in by the city on tax liens in the early fall.

Chace Stock Advances

Following a change in management at the Chace Mills when the entire plant was shut down, operations were resumed and the stock advanced from the low of $20 per share to $32. A change in management resulted at the Weetamoe Mills because of the resignation of Enoch J. French. He was succeeded by a younger man in Eugene J. Timanus who now has the management of the combined Weetamoe and Mechanics. The merger was made by the Weetamoe increasing its capital stock 7,500 shares and paying the same to the Mechanics stockholders. At the time of the merger the Weetamoe owed about $100,000 and the Mechanics had a surplus of about $50,000. The stock of each was being quoted at $20 at the time.

The controlling ownership of the Pocasset Mfg. Co. changed hands in the early summer and the new ownership immediately ran off all stock in process and closed down the plant. The goods have since been sold and no definite information has been obtainable as to the future plans concerning the plant. There was a general opinion voiced among the local mill men at the time of the purchase that it was intended to continue the No. 5 plant of the mill and sell the balance to varied interests.

The death of Edward Barker necessitated a new treasurer at the Flint Mills as well as at the Stafford, he being treasurer of both corporations at the time of his death. He was succeeded at the Flint by J. Whitney Bowen, who went there from the Laurel Lake Mills. Mr. Bowen has given good satisfaction in that he was able to pay 6% in dividends from earnings with one of the mills closed. Paul Gifford succeeded Mr. Bowen at the Laurel Lake and he has the confidence of his stockholders that he is going to bring the mill back though with a large debt it promises to be a long, hard job.

American Linen, Arkwright, Troy and Osborn have had particularly hard years, each having large liabilities at the opening of the year which they have not been able to reduce. Narragansett also showed a shrinkage in net quick assets for the year, but still has a surplus of $50,000. Parker Mills were forced to reorganize during the year to get new capital but they are now apparently in a better condition than at any time in the last five years.

King Philip Makes Best Showing

Under the able management of Simeon B. Chace the King Philip Mills made the best showing of the local mills for the year, earning its

FALL RIVER DIVIDENDS 1926

(From G. M. Haffards & Co.)

Names of Corps.	Capital	Rate	Amount
American Linen.	$800,000	0	.....
Ancona pfd....	100,000	0	.....
Ancona com....	200,000	§	.....
Arkwright.....	1,000,000	0	.....
Barnard.....	1,250,000	0	.....
Bourne.....	1,000,000	4½	$45,000
Border City....	1,800,000	0	.....
Chace.....	1,200,000	0	.....
Charlton.....	1,200,000	8	96,000
Conanicut.....	*300,000	0	.....
Cornell.....	600,000	4	24,000
Davis.....	2,500,000	6	150,000
Davol.....	1,500,000	0	.....
Flint.....	1,160,000	6	69,600
Granite.....	1,250,000	0	.....
King Philip....	2,250,000	16	360,000
Lincoln.....	2,250,000	0	.....
Luther.....	525,000	8	42,000
Laurel pfd.....	300,000	0	.....
Laurel com.....	600,000	0	.....
Merchants.....	1,500,000	4	60,000
Mechanics.....	‡750,000	0	.....
Narragansett...	600,000	0	.....
Osborn.....	750,000	0	.....
Parker pfd.....	1,250,000	0	.....
Parker com....	1,500,000	0	.....
Pilgrim.....	1,200,000	8	96,000
Pocasset.....	1,200,000	0	.....
Richard Borden.	1,000,000	2	20,000
Sagamore.....	3,000,000	8	240,000
Seaconnet.....	1,200,000	0	.....
Shawmut pfd...	250,000	7	17,500
Shawmut com..	350,000	5½	19,250
Shove.....	1,200,000	0	.....
Stafford.....	1,000,000	0	.....
Stevens.....	1,200,000	6	72,000
Tecumseh.....	750,000	18†	135,000
Troy C. & W...	300,000	0	.....
Union Cotton...	1,200,000	6	72,000
Wampanoag....	1,000,000	0	.....
Weetamoe.....	*500,000	0	.....
	$43,585,000		$1,518,350

*Amount authorized. Outstanding $251,700.
†Distribution of assets.
‡Consolidated with Weetamoe Mills, December 30, 1926.
§Dividends not made public.
•Capital increased to $1,250,000 for the purpose of taking over the Mechanics Mills.
An average of 3.484% on the above capital.

HIGH AND LOW ON FALL RIVER STOCKS

(From G. M. Haffards & Co.)

	—1926—		—1925—	
	High	Low	High	Low
Am. Linen....	31	13	45	27
Ancona pfd...	No Sales		No Sales	
Arkwright....	15	10	16	7
Barnard.....	50	41	75	55
Bourne.....	100	54	105	97½
Border C. M..	62	36	99	56
Chace.....	38	15	55	30
Charlton.....	125	110	135	125
Cornell.....	100	75	101	95
Conanicut.....	No Sales		No Sales	
Davol.....	42	20	65	40
Davis.....	96	66½	100	85
Flint.....	101	77½	125	90
Granite.....	60	17½	75	58
King Philip...	137	112	160	130
Laurel L. com.	9½	5	8½	7
Lincoln.....	65	41	107	73
Luther.....	130½	115	125	125
Merchants.....	72	45	105	79
Mechanics.....	43	18	65	41½
Narragansett..	65	55	85	85
Osborn.....	60	20	75	55
Parker com....	No Sales		8	1
Parker pfd....	No Sales		11	11
Pilgrim com...	143	138	175	169
Pocasset.....	35	24	50	30
R. Borden.....	70	35	105	60
Sagamore.....	177	130	242½	170
Seaconnet.....	No Sales		No Sales	
Shove.....	30	10	55	27½
Stafford.....	46	13	50	50
Stevens.....	119½	105	128½	112
Troy C. W. M.	125	105	125	120
Union Cotton..	110	70	132	95
Wampanoag...	40	15	60	50
Weetamoe.....	29	15	32	28¼

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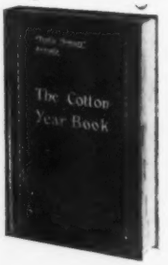

COTTON YEAR BOOK

1926 EDITION

This handbook is an annual review of the Cotton Industry, published by the Textile Mercury.

It consists of a complete outline of latest British practice in mill operation, management, trade customs, etc., with descriptions of machinery and processes.

Latest developments in British practice covering Cotton manufacturing, dyeing, bleaching and finishing are given special attention.

Artificial Silk Fibres and their characteristics form an important feature in this edition.

WOOL YEAR BOOK

1926 EDITION

This is also an annual review, but for the woolen and worsted industry.

Notes regarding the uses of synthetic fibres, including Rayon are included. The more important technical researches of last year are outlined in the review, "The Progress in Dyeing and Finishing During the Past Year" and full consideration is given to the latest mechanical developments. The statistical section has been fully revised and the latest information on prices, stocks, wages, etc., has been incorporated.

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regular dividend of 6% and the 10% extra which was paid in December. The stock nevertheless dropped to a new low of $125 during the year, following the payment of the extra dividend, though a large surplus was shown by the annual statement.

As the Sagamore Mfg. Co. has not held its annual meeting at the time of writing it is impossible to give the earnings of the corporation for the year. It has paid 8% in dividends and though its stock dropped to the new low of 130 it rallied later to 150. The Pilgrim Mills, Charlton Mills and Luther Mfg. Co. also paid 8% for the year, and mainly from earnings. They are all fine goods mills like the King Philip.

The Stevens Mfg. Co., Davis Mills, Cornell Mills, Union Cotton Mfg. Co., Bourne Mills, Richard Borden Mfg. Co., and Shawmut Mills were the only other dividend-paying corporations. The Stevens, Davis and Union each paid 6%, the Bourne and Cornell 4%, the Richard Borden 2% and the Shawmut, 7% on preferred and 5½% on common.

The showing of the mills is considered good though not quite the equal of the other dividend payers and their stocks dropped to new lows in the course of the year.

The Barnard Mfg. Co., Lincoln Mfg. Co. and Wampanoag Mills were included among the corporations that passed dividends for the year, and whose stock dropped to new low quotations. The Barnard and Wampanoag have yet to hold their annual meetings, but the annual statement of the Lincoln showed a material loss for the year.

Expect More Southern Stock Trade

Outlook for Increased Demand in 1927—Surprise Felt that 1926 Levels Were Not Lower

Prepared for TEXTILE WORLD by A. M. Law & Co., Spartanburg, S. C.

THE most surprising feature of the market for southern cotton mill stocks for the year 1926 is that the stocks of the stronger and larger companies did not decline more than they did, for at no time during the year was there any particularly favorable situation for the industry and there were many unfavorable factors to combat. In the spring there was a large surplus of goods on hand necessitating considerable curtailment and other drastic measures, followed later by a precipitous decline in the raw cotton market requiring some inventory losses.

There have been, however, some favorable factors for the southern mills. For the first time in their history they have cooperated in a definite program of curtailment which has corrected the over-production of goods and they participated in the organization of The Cotton-Textile Institute which in time should be of great service to the industry. The decline in cotton also occurred at a time when most southern mills had a very small inventory of either goods or cotton and their inventory losses were hence correspondingly low. Mills have also learned that it is necessary for them to watch more carefully the selling end of their business, employing up-to-date and aggressive methods to sell goods instead of the obsolete practice of selling agent simply booking orders which came to them.

There have been many inquiries received from investors in various sections of the country who have read of the depression in the textile industry and have expected on this account to be able to purchase bargains in southern cotton mill stocks, believing them to be fundamentally sound and a good purchase at this time, as they consider the industry on the upward trend. Invariably these parties have been surprised to find that the best southern mill stocks are selling at good prices and have not declined.

A continuous investment demand for the best common as well as preferred stocks has accounted for this steady market. It is also true that many of these strong mills have shown reasonably good earnings sufficient to pay their dividends by a satisfactory margin during the past year in spite of the depression. Going back over a period of years these buyers are keeping in mind that dividends have been maintained regularly on the common stocks of these mills at a satisfactory rate without interruption for a period of 10 years. These stronger companies have ample working capital, good management, aggressive selling arrangements and up-to-date equipment.

Offerings Limited

That the market for southern mill stocks was not active was due to the fact that the offerings of stocks have been quite limited. The market was unusually quiet during the summer. There was considerable activity in January and February and also toward the close of the year. Preferred stocks such as Pacolet, Arcadia, Beaumont, Union-Buffalo, Riverside & Dan River and Bibb preferred have been in good demand and the issue of Judson Class B preferred was distributed in an orderly way.

The payment of 100% common stock dividend by Bibb Mfg. Co. increasing its common stock from $10,000,000 to $20,000,000 and its total capital to $25,000,000 was one of the outstanding features of the market and places Bibb as the largest southern cotton mill from the standpoint of capitalization. This mill has paid stock dividend after stock dividend, maintaining good cash dividends also. The market for the stock has advanced steadily and was very active during the closing months of 1926. It is now undoubtedly the most actively traded in southern mill common stock.

SOUTHERN MILL STOCKS, 1926
(From A. M. Law & Co.)

Mill	Dividend	Quotations High	Low
Abbeville Cotton Mills	6%	105	93
American Spinning Co	10%	270	200
Anderson Cotton Mills	6%	119	93
Arcadia Mills	10%	245	225
Avondale Mills, Ala	60%	950	900
Beaumont Mfg. Co	10%	325	300
Belton Mills	....	68	45
Belton Mills, Pfd	7%	99	95
Bibb Mfg. Co. (100% Stk. Div.)	6%	200	110
Bibb Mfg. Co., 6% Pfd	6%	101	99
Brandon Mills, Pfd	7%	102	99
Calhoun Mills	10%	120	114
Chesnee Mills	10%	140	133
Chiquola Mfg. Co	20%	300	280
Chiquola Mfg. Co., Pfd	6%	100	94
Clinton Mfg. Co	8%	140	132
Columbus Mfg. Co., Ga	8%	138	120
Cowpens Mills	....	64	50
D. E. Converse Co	7%	112	105
Dallas Mfg. Co., Ala	6%	135	130
Darlington Mfg. Co	....	84	75
Dunean Mills	....	94	82
Dunean Mills, Pfd	7%	96	91
Eagle & Phenix Mills, Ga	6%	140	120
Easley Cotton Mills, Pfd	7%	92	88
Enterprise Mfg. Co., Ga	....	110	105
Gaffney Mfg. Co	....	86	70
Gainesville Cotton Mills, Ga	8%	189	180
Glenwood Mills	8%	135	130
Gluck Mills	....	90	80
Hamrick Mills	10%	126	112
Inman Mills	7%	150	125
Inman Mills, Pfd	7%	103	101
Judson Mills	8%	205	145
Judson Mills, Pfd	7%	104	101
Laurens Cotton Mills	7%	155	145
Limestone Cotton Mills	10%	128	112
Mollohon Mfg. Co	8%	107	93
Monarch Mills	7%	134	127
Monarch Mills, Pfd	7%	103	101
Musgrove Cotton Mills	....	78	60
Newberry Cotton Mills	8%	131	117
Norris Cotton Mills	....	80	70
Orr Cotton Mills	8%	102	93
Orr Cotton Mills, Pfd	7%	100	94
Pacolet Mfg. Co	10%	216	200
Pacolet Mfg. Co., Pfd	7%	105	102
Piedmont Mfg. Co	8%	139	130
Poe, F. W., Mfg. Co	6%	115	107
Poinsett Mills	6%	85	70
Riverside Mills (Par $12.50)	6%	11½	9¾
Riverside & Dan River	10%	189	165
Saxon Mills	6%	95	83
Sibley Mfg. Co., Ga	....	60	40
Spartan Mills	8%	160	150
Toxaway Mills (Par $25)	8%	35	32
Union-Buffalo Mills	....	50	30
Union-Buffalo Mills, 1st Pfd	7%	94	87
Union-Buffalo Mills, 2d Pfd	150%	51	45
Victor-Monaghan Co	8%	108	88
Victor-Monaghan Co., Pfd	7%	111	106
Ware Shoals Mfg. Co	10%	152	140
Woodruff Cotton Mills	8%	142	116
Woodside Cotton Mills Co	8%	121	109
Woodside Cotton Mills Co., Pfd	7%	91	85

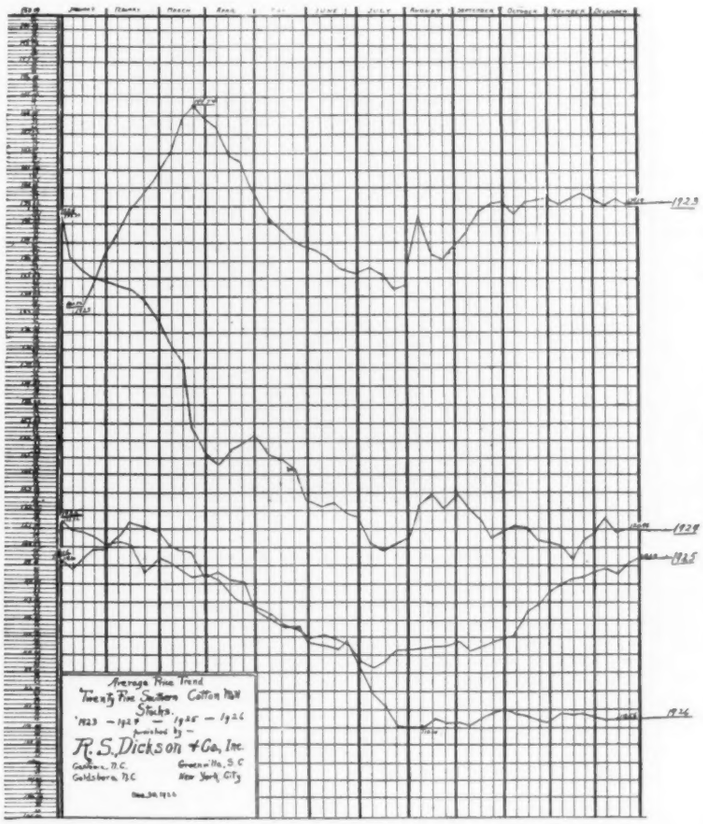

Chart Showing Price Trend of Southern Cotton Mill Stocks

Outlook for 1927

It is generally felt that in 1927 we will have more trading in all classes of textile stocks than at any time since 1923. Cotton has been stabilized on a bisis such that mills need not fear large inventory losses from this source. There is a shortage of goods and satisfactory manufacturing conditions generally. This increasing interest has brought some speculative demand for stocks which will probably increase, especially for the lower priced stocks. There will be sufficient liquidation on the part of holders who have been affected by the failure of their cotton crop to supply sufficient shares for market activity.

There is an ever increasing interest on the part of New England corporations in the purchase of southern mills now in operation or in sites for the erection of new plants. This general movement will continue over a period of years. It will not likely affect southern mill stocks as most of the corporations moving their plants South will remain New England concerns. It indicates, however, the trend of the industry and that stocks of well managed southern mills which have been operating for a period of years are sound and attractive.

Quicker Sales for Pine Tree Crepe

—*how Kaumagraphs made it possible*

"YES," said the weary sales girl who had hitherto shown little interest in the transaction, "this material is washable."

But this assurance failed to satisfy the customer. "How do I *know* it is washable?" she meditated. "Maybe the girl's just saying so to make a sale. What proof have I—what protection? . . . I don't think I'll take it."

* * *

Instances like these, take it on authority, have been a constant brake on dealers' sales. The authority is Mr. Walter Johns, L. Dannenbaum's Son & Co., Factors, Pine Tree Silk Mills.

Some months ago, says Mr. Johns, his company conceived an idea:—why not stamp the word "washable" right on the goods? What better way to convince the customer? What better way to help the dealer and his sales people?

So they tried out the idea on just one of their fabrics—Pine Tree Crepe. Well, it proved such a boon to the trade that L. Dannenbaum's Son & Co. found it profitable to extend the idea to other fabrics. For dealers say it is one of the most profitable ideas for quicker sales that they could have been given.

"Of course," says Mr. Johns, "the execution of the idea was made possible only by the co-operation of the Kaumagraph Company. For with Kaumagraph Transfers we apply the word "washable" at regular intervals along the selvage of the fabric. I know of no other method that stamps the mark so clearly, and at the same time strikes the edge so evenly."

Based on an interview with
Mr. Walter Johns,
L. Dannenbaum's Son & Co.
Factors, Pine Tree Silk Mills

A Sale made easier with Kaumagraphs

SALESGIRL: *Yes, madam, it's washable.*
CUSTOMER: *You say so, but how do I know it?*
SALESGIRL: *See, madam, it says so right here on the selvage of the fabric.*
CUSTOMER: *So it does. Well, I'll take 4 yards.*

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334 Fourth Ave., at 25th St. NEW YORK, FEBRUARY 5, 1927 VOL. LXXI, NO. 6

Outlook for China as a Producer of Raw Silk

Progress Has Been Small in a Half Century—Area and Teeming Millions of Population Favor Development—National Character and Political Uncertainties Dominate at Present—Other Difficulties in Way of Expansion

By William E. Spafford

THERE is a tendency, when the question of China's future as a producer of raw silk is considered, to deal in generalities. This is a very natural mistake to make and nearly all of those venturing opinions on the subject have fallen into the same error. The temptation is great to take a broad, general view of the whole question. The usual line of reasoning runs about as follows: To produce raw silk economically and in volume there is necessary primarily a large supply of cheap labor and secondly adequate land to raise mulberry trees. Japan has had both of these factors to aid her in attaining a dominating position in the production of raw silk. Compared with China, Japan's resources of land and cheap labor are utterly dwarfed. Therefore, China, with her vast territory and her teeming millions is the place to look for the future of raw silk.

This viewpoint appeals in its implacable logic. Many have subscribed to the belief that China is the coming center of raw silk production. With some hesitation, therefore, we point out that at the present and for many years to come there will be difficulties in the attainment of this goal. Twenty-five, fifty, or a hundred years from now, China may dominate but it most certainly is a matter of the long range future. For the next decade and for that matter for many decades, if we judge correctly, China will merely serve as a useful aid to Japan in providing the world with its yearly supply of the Queen of Fibers.

The Background

In considering what will happen in the future, it is interesting to review what has happened in the last 50 years. This half century has been a critical one in the history of raw silk which incidentally stretches back many thousands of years to the fabled Empress of China who first discovered the art of reeling raw silk from cocoons. The story of silk over these centuries has been an absorbing romance with adventure and intrigue going hand and hand with the more prosaic details of commerce. The half century from 1875 on to the present day has been momentous in that the former luxury of the few has become the commonplace of the millions.

The greatest part of this growth has occurred in the United States although Europe prior to the World War was also taking larger and larger quantities. In the United States in 1875 we imported and used a few thousand bales only. The actual figure in 1876 was 1,200,000 lbs. By 1900 this had increased to 11,200,000 lbs.; by 1910 to 22,300,000 lbs., and by 1925 to 64,200,000 lbs. In terms of bales we imported in 1926 slightly over 500,000 bales of silk.

The tremendous increase in the imports of raw silk to the United States has been paralleled by the increase in exports from Japan. This extraordinary market has furnished the Japanese with the incentive to increase her exports thirty fold. In the meantime what has happened in China, the country that gave silk to the world in the first place, and which in 1875 far outstripped Japan in the pursuit of the world's markets?

Shanghai District

Taking the exports of raw silk from Shanghai as a basis we find that in 1875 they amounted to 75,300 bales. The exports from the port of Shanghai are used as they are reliable and by the same token good testimony. Shanghai is the port which serves the whole of the northern producing district just as Canton does for the southern district. The exports from Shanghai are larger and embrace a wider variety of raw classifications than those of Canton.

With the use of silk steadily growing in the prosperous western nations, we find that by 1913, the year immediately prior to the war, exports had increased slightly to 85,000 bales. This latter figure, moreover, includes some 20,000 bales of tussah silk which first began to be shipped abroad in the early 80's. Actually in the 35 years intervening which offered every incentive to produce more silk, the exports of high grade steam filatures, or silk that approximated this quality, had declined. Nor is there a different story in the subsequent 15 years which brings us down to the present. During 1925 there were exported 89,000 bales of which about 14,000 bales were tussah so that of white and yellow filature silk only about 75,000 bales were sent out of the country. Comparing this total with 1875, the inference is striking. With minor ups and down in periods of high and low prices, the northern district of China has remained just exactly in statu quo.

Canton District

Nor is there any different story to tell as regards the Canton district. In 1913 the Canton district exported 66,900 bales of raw silk. As this year is rather high and the year immediately preceding and following much lower, we will take an average for the three years of 50,000 bales. Over the 13 subsequent years, we find variations in the individual years but no real progress. In 1925 exports amounted to 50,000 bales.

The conclusion to be drawn from these figures is simply this: Over a period of a half century when the world use of silk has increased many times, China has not made any effort to gain her just proportion of the increase. Or if she has made the effort, it cannot be said that her efforts have been crowned with success. With everything in her favor in the way of territory and cheap labor it is interesting to cast around for the reasons for this lack of progress and also to weigh the possibilities of a change.

National Character

First and foremost it is necessary to consider the character of the people and the country. This right at the start has been fatal to any spirit of progress. The cult of ancestor worship, the reverence of the past, the wish to let well enough alone, have been commented on too many times and are too well known to need any repetition here. The basic fundamentals of the Chinese nature over the centuries appear unchanging and unchangeable. This feature is at the same time her weakness and her strength. It has enabled her to preserve her customs and traditions for thousands of years while the volatile nations of the West rose to power and then decayed. It has enabled her to cast off the yoke of conquerors by the simple expedient of absorbing them into her national life.

Political Conditions

As a somewhat minor matter we have had to consider the troubled political conditions since the revolution in 1911. A revolution in certain respects may be thought to indicate the dawning of a newer era but not in the case of China where the revolution concerned itself with the few while the real China is the millions. Since 1911, this vast country has fallen prey to military adventurers. The lack of a stable Government, however, is not a pressing matter. The real Government of China is now as it has been in the past in the control of the guilds, village communes, and popular organizations. The supreme Government has always been nominal in that the vast distances, the difficulty of communication, and the lack of any real need for unified control to wage war or treat with foreign nations, have made the central power that of a tax gathering organization almost entirely.

At the same time there has been a rather general spirit of unrest that has expressed itself mainly in the coastal regions in an unreserved hate for foreigners. The Chinese have viewed with some alarm the encroachment of the Europeans, small as it was, and have resented the unfair exactions demanded by the various treaties. These treaties were presumably for the furtherance of commerce, friendship, and navigation but actually they are at the root of the present difficulties. The most favored nation clause places a severe limitation upon China's freedom of action while the principle of extra-territoriality as applied in China is at least open to question as to fairness. The principle of extra-territoriality now applies to places 1,500 miles in the interior of China. What would we in this country do if France, for instance, demanded and obtained a section of Chicago where American laws and authority had no weight—a slice of France in the midst of Americans?

The Currency Problem

Another factor in the way of any real growth in China's export trade in raw silk is the silver basis to her currency. Maintaining her position

in the face of a world switch to the gold standard, she multiplies her trade difficulties. Despite the stability of her individual business firms, the fluctuating values of a silver currency place an almost insuperable barrier in the way of any real growth in her export trade. Just what a silver standard has meant in recent years can be judged from the fact that the price of silver has ranged from 50c an ounce to above $1.25 and finally back again. Naturally the small proportion of export business to domestic business makes changes in price levels a slow matter. At the same time, it worked out to the detriment of reelers in the war years. While raw silk prices were advancing in 1917, 1918, and particularly in 1919, the advancing trend to the price of silver and silver exchanges, kept the return of filatures down to modest proportions.

Now that the situation has been reversed in the last five or six years, raw silk interests have benefited. The decline in silver exchange has permitted a higher price in terms of taels or Hong Kong dollars. This would seem to be the one favoring factor in the while situation to help raw silk producers to expand their output. To offset the benefits, though, to some extent, there will be a change in the domestic price level which may force slightly higher wages.

Under a fairly stable form of government, we have seen that China has failed to do more than hold her own in the production of raw silk. There is nothing to indicate that she will do more in the troublous years to come. Dealing in generalities, China offers the hope of a new and fertile source for raw silk when Japan finally stops expanding. Viewed in the concrete the expectations have little more than hopes to base themselves on.

Active Wool Machinery

WASHINGTON, D. C.—The Department of Commerce announces statistics on active and idle wool machinery for December, 1926, based on reports received from 903 manufacturers, operating 1,082 mills. This is exclusive of 9 manufacturers, operating 17 mills, who failed to report for the month. According to reliable textile directories for 1926, these nonreporting mills are equipped with about 3,448 looms, 184 sets of woolen cards, 133 worsted combs and 232,701 spindles.

The accompanying table gives the percentages of machines in operation with usual comparisons:

Month	Looms: Wider than 50 in. reed space	Looms: 50 in. reed space or less	Looms: Carpet and rug	Sets of cards	Combs	Spinning spindles: Woolen	Spinning spindles: Worsted
Per Cent Active of Total Number of Machines							
Dec., 1926	69.6	70.3	66.7	78.7	72.7	75.7	77.4
Nov., 1926	69.7	70.1	66.8	79.8	76.0	77.1	79.0
Dec., 1925	69.8	71.3	73.9	78.9	76.4	75.7	74.6
Per Cent Active of Total Hours (Maximum Single-shift Capacity)							
Dec., 1926	71.5	66.9	65.4	80.0	83.7	76.6	78.0
Nov., 1926	73.0	67.2	67.4	84.2	88.0	81.0	79.9
Dec., 1925	69.9	63.9	67.1	80.8	86.0	76.1	71.4

Details of Textile Exports

Shipments During 1926 Were Disappointing, But Hope for Betterment Persists

PARTICULARS of export trade during the year, while largely of a disappointing character, at the same time provide certain bases for an encouraging forecast. Perhaps one of the most important of the latter features is the improved demand for American cotton yarn. In spite of the downward course of the market during the year, total exports have increased from 21,891,810 lbs. in 1925 to 24,036,636 lbs. during the last calendar year. An increase in value of only $235,725 is a reflection of the lower average level at which the business in yarn has been done. While naturally the total of carded yarn sent abroad exceeds that of combed it is surprising to note that the aggregate sales of the latter are well more than half the total.

Shipments of cotton cloth form the barometer of textile exports. Here the decline has amounted to approximately 30,000,000 yds., while the decrease in value is slightly over $400,000. The aggregate of cotton cloths sent abroad during 1926 was 543,316,851 yds. Increases are most conspicuous in the case of Cuba and the Philippines, the latter taking of unbleached and bleached fabrics alone an increased aggregate of 11,500,000 yds. It is surprising to note in this connection that Cuba's record on unbleached cotton is less favorable than in 1925, but in other classes of fabric her takings have been larger. Latin American countries have been better customers for unbleached cottons during 1926 than in the year previous, but on other types of fabric these countries show a falling off. Ecuador bought of yarn or stock dyed goods alone two million yards less than in 1925. Canada has increased her takings of American cottons, the increase in bleached and printed fabrics totalling 8,500,000 yds.

On the opposite side of the picture China naturally stands out prominently in the losses recorded. The princely total of 632,132 yds. of unbleached cottons for the year, with a value of $115,381, compares with 6,530,072 yds. at a valuation of $912,813 for the preceding year, thus accurately reflecting the demoralized condition of the country and its lack of possibilities as an outlet for American goods until radical improvement in economic conditions is effected. Turkey, Mexico and Haiti also figure prominently in the losses indicated.

Wool and silk manufacturers are in the same class as far as losses in export trade are concerned, though the falling off has not been particularly radical. Exports of silk and rayon hosiery also indicate the same trend, the loss in silk stockings amounting to 341,769 dozen pairs, an inconsiderable amount, while exports of rayon hosiery have been less by 309,756 dozen pairs, the decrease in value amounting to $1,467,650.

Appeal on B.A. 6s

Government Case Against Bigelow-Hartford Carpet Co. Heard

WASHINGTON, D. C.—The Government's appeal in the Bigelow-Hartford Carpet Co., case involving the dutiable classification of Buenos Aires wool of the sixth grade, was heard Jan. 31 by the U. S. Court of Customs Appeals.

A lot of 15 bales of B. A. 6s was assessed at Boston with duty at 31c per lb. "of clean content," under paragraph 1102 of the 1922 Tariff Act. On protest filed by the importer the U. S. Customs Court held that the wool should have been assessed under Paragraph 1101 at 12c per lb., for wools not improved by the admixture of merino or English blood.

Clarence D. Lawrence, the Assistant Attorney-General, who presented to the court the argument in the Government's appeal from the lower court's decision, contended that the evidence introduced by the Bigelow-Hartford Company does not establish any of the facts necessary to bring this wool within the provision of Paragraph 1101. He asserted that on the face of the record, it is evident that the wool is a Lincoln wool which for a great many years has been recognized as a wool of "English blood;" and contended further that the importer's own testimony proves conclusively that the wool is unlike any of the wools which are classifiable under Paragraph 1101.

"If Buenos Aires 6s were to be granted a tariff status in Paragraph 1101," declared Mr. Lawrence, "there is no logical reason why Buenos Aires 1s, 2s, 3s, 4s and 5s might not also seek the same level. But they are all Lincoln wools for years identified as Class II wools of English blood, separate and distinct from native wools, which have been recognized as Class III or carpet wools."

The Assistant Attorney-General explained that when used in carpet manufacture, it is not practicable to employ more than 15 to 20% of B. A. 6s in the blend with carpet wools because it lacks the qualities common to the latter. Mr. Lawrence stated that the use of the importation in carpet manufacture doubtless resulted from its low price because, under normal conditions it is devoted to making luster goods as its long, strong, lustrous fiber readily adapts it to that purpose.

When Congress enacted Paragraph 1102 it did not seek to tax wool like B. A. 6s at the prohibitive rate of 31c a lb. on clean content upon any theory of protection to American wool growers, declared Joseph F. Lockett, of Boston, of counsel for the Bigelow-Hartford Carpet Company. The protective feature present in many tariff cases is absent in the present proceeding, he said, as the type of wool in issue does not compete with any wool grown in this country. Mr. Lockett argued that the wool is a native South American.

The term "English blood," he said, means the blood of the wool, and therefore provided for *eo nomine* in Paragraph 1101, Down Sheep of England. He disagreed emphatically with the impression given by Mr. Lawrence that B. A. 6s are used principally in the manufacture of clothing. He turned to the record to refute Government counsel, referring particularly to the testimony of one witness, a wool dealer, that 87% of his B. A. 6s have been sold to carpet mills in the last 13 years.

Mr. Lockett said the Assistant Attorney-General's contention that if B. A. 6s are classifiable under Paragraph 1101, the higher grades may also seek the same level, is new to his experience. The court's duty, he said, is to take the law as it is written and apply it to the facts in the case in order to determine if the decision of the trial court was correct.

YEAR'S RECORD OF IMPORTS AND EXPORTS

EXPORTS

	1925 Quantity	1925 Value	1926 Quantity	1926 Value
Carded yarn, lbs.	13,506,064	$5,708,404	14,794,455	$5,236,986
Combed yarn, lbs.	8,385,746	6,187,796	9,242,181	6,894,939
Total	21,891,810	$11,896,200	24,036,636	$12,131,925
Cotton cloth, sq. yds.	543,316,851	85,011,749	513,298,940	74,597,765
Cotton hosiery, doz. prs.	5,534,222	10,494,361	4,744,584	8,407,326
Cotton underwear, doz. prs.	1,019,007	3,827,662	794,341	3,213,987
Wool mfres.	.....	4,931,858	.....	3,954,187
Wool knit goods	.....	543,985	.....	724,527
Silk mfres.	.....	18,181,846	.....	17,788,377
Underwear, No.	109,649	237,237	83,226	169,219
Hosiery, doz. prs.	1,202,187	10,367,633	960,418	8,995,012
Rayon hosiery, doz. prs.	1,561,491	6,176,571	1,251,735	4,708,921

IMPORTS

Cotton cloth, sq. yds.	109,249,133	26,424,126	59,679,598	16,257,721
Wool cloths, sq. yds.	21,437,938	21,983,777	19,498,238	20,948,530
Wool hosiery, doz. prs.	184,342	412,572	152,249	340,298
Silk fab., sq. yds.	2,745,094	14,255,327	3,738,949	18,626,517
Rayon mfres.	.....	13,118,307	.....	13,898,990
Yarns, threads and filaments, lbs.	7,000,521	8,170,893	10,163,068	9,050,665

Spencer Turner Elected President of Cotton Textile Merchants

Spencer Turner, of Turner, Halsey Co. was elected president of the Association of Cotton Textile Merchants of New York, at a meeting of the board of directors last Monday.

William F. Adam, of American Bleached Goods Co., was elected vice president; Norman S. Hope, of Wellington, Sears & Co., treasurer; and Perry S. Newell was re-elected secretary.

On the board of directors are William F. Adams, Arthur Greey, of Tatum, Pinkham & Greey; Henry C. Taylor, of Taylor, Clapp & Beall, and Ridley Watts, of Ridley Watts & Co.

Willard A. Baldwin, of Woodwin & Co.; Harold A. Hatch, of Deering, Milliken & Co.; Spencer Turner, and Frederic A. Williams, of Cannon Mills, Inc.

Elroy Curtis, of Fleitman & Co., Inc., Seaboard Dept.; Saul F. Dribben, of Cone Export & Commission Co.; Norman S. Hope; G. E. Huggins, of The Farish Co., Inc.

The executive committee includes the president, vice president, and Henry C. Taylor, S. F. Dribben and Norman S. Hope.

Cotton Bills Reported Out of Committee

WASHINGTON, D.C.—Senator Mayfield reported from the Senate Committee on Agriculture on Tuesday his bill (S. 4746) authorizing the Secretary of Agriculture to collect and publish statistics on the grade and staple length of carry-over cotton on hand Aug. 1 of each year and, at intervals, his estimate of the grades and staple length of cotton of the then current crop.

The House Committee on Agriculture voted on the same day to report favorably H. R. 16470, the bill of Rep. O'Connor, of Louisiana, amending the Cotton Futures Act to place the New Orleans futures contract on a parity with that of New York and Chicago contracts by providing that settlements shall be made on the basis of the average price of cotton in the designated spot markets. Rep. O'Connor's bill is similar to the Senate Bill (S. 4974) by Senator Ransdell, reported by the Senate Committee on Agriculture Jan. 14.

S. C. Politician Wears Home-Spun Suit from S. C. Sheep

GREENWOOD, S. C.—A. G. Outzs who attracted attention during his campaign last year for Governor by wearing all-cotton suits, the cloth for which was manufactured in South Carolina from home grown cotton, is now in Columbia attending the legislature clad in an all-wool suit, the cloth for which came from sheep raised in Oconee county in this state and home spun and woven on an old fashioned hand loom.

Some Knitting Problems

Yarn Counts—Narrowing Seamless Hose—Splicing—Line Defects—Needles, Bobbin Stands, and Winders for Rayon

By W. E. Boswell

THE reduction of the number of "seconds" and the amount of waste made in the manufacture of garments is a problem that has to be grappled with in most knitting mills.

Rayon is being knitted up into fabric at an increasing rate, and many difficulties have been experienced in controlling this "lively" type of yarn during the actual knitting process. Machines that have been running on cotton or wool yarns are often found to give imperfect fabric when rayon is worked. Very often the whole of the needles and sinkers in the machine require to be changed before a perfect fabric can be obtained. The reason is that a very slight roughness on needle or sinker will not have any effect on wool or cotton, but will make a hairy line on artificial silk fabric.

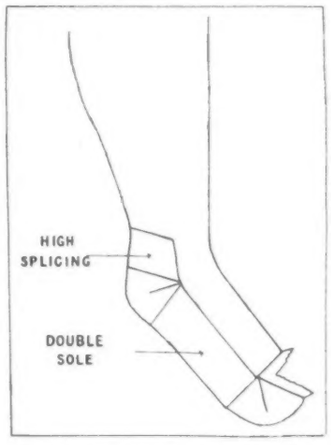
The mounting of the bobbins on the bobbin stands needs attention, as when the machine is stopped the yarn between the bobbin and the first thread guide often falls below and becomes trapped under the base of the bobbin stand, causing a break when the machine is again started. Several methods may be adopted to prevent this. The use of metal saucers having a wide base and a hollow in the centre ¼ in. deep, in which the bobbin will exactly fit, is one way of preventing this. A more rough-and-ready method is to stand the bobbin in a pad of cotton wool resting on a cardboard base.

The winding of the yarn is of the utmost importance, and great attention has been given in the construction of the latest types of winding machines for rayon to avoid any undue strain on the yarn during winding. Lack of care in the tying of knots causes many press-offs, resulting in a large percentage of waste. Knots should be made firm and the ends cut off short. Before the bobbin is restarted, the knot should be taken to the bottom of the traverse instead of being left in the centre of the traverse. It will be seen in the latter case that the covering layer of yarn drags on the knot when it is being worked on the machine. Porcelain or glass guides are advisable as thread guides on the knitting machine; metal guides are apt to become rough and cause a drag on the yarn.

Cotton or wool yarns do not need so much attention in preparation and will very often give a good fabric on needles that would be unsuitable for rayon.

Yarn Count

The ideal texture of a knitted fabric can only be obtained when the right count of yarn is fed to the needles. Yarn that is too thin for the gauge will give a fabric that has too many courses to the inch, as the loop has to be shortened to prevent the fabric being knitted too flimsy. When the yarn is too thick, the loop must be lengthened or the fabric is too stiff and lacks elasticity. The number of courses to the inch in a normal fabric



Splicing in Line With Heel and Toe

should be approximately one and one-half times the number of needles per inch in the machine. The normal counts in worsted for various gauges are given in the following tables. Equivalent counts in other yarns would be used.

Latch Needle Circular Web	
10 needles per inch	2/18's to 2/22's
12 needles per inch	2/22's to 2/26's
14 needles per inch	2/26's to 2/30's
16 needles per inch	2/30's to 2/36's
18 needles per inch	2/44's to 2/52's

Latch Needle Seamless Hose	
8 N.P.I.	2/14's
10 N.P.I.	2/20's
12 N.P.I.	2/26's
14 N.P.I.	2/36's
15 N.P.I.	2/42's
16 N.P.I.	2/46's
17 N.P.I.	2/50's
18 N.P.I.	1/28's
19 N.P.I.	1/32's
20 N.P.I.	1/36's

Cotton's Patent Frame	
16 Gauge	2/14's to 2/16's
18 Gauge	2/18's
20 Gauge	2/20's
22 Gauge	2/22's
26 Gauge	2/26's to 2/30's
28 Gauge	2/30's to 2/36's
30 Gauge	2/36's to 2/42's

Flat Knitting Machines	
4 Gauge	2/12's
5 Gauge	4/16's
7 Gauge	3/18's
9 Gauge	2/16's
11 Gauge	2/20's

Seamless Hose

A large number of defects in the manufacture of stockings on automatic seamless hose machines are due to the alteration in the length of loop during the making of the leg being too pronounced.

These stockings are shaped by the gradual reduction of the length of loop from the calf to the ankle. The top of the leg is made very slack for the welt and the ankle is made as stiff as possible. In an attempt to get a small ankle, the shortening of the loop in this part is often overdone and the fabric is found to contain holes due to the strain placed on the yarn during the casting of the stitch over the needle hook.

The loop must be lengthened for heel and toe. In some cases this is done by the raising of the needle cylinder, and in others by the lowering of the knitting cams. If the change is too pronounced, the loops on the needles underneath the stitch cams may be broken by the strain and a hole will occur.

The Splicing Thread

The back of the ankle and the foot bottom are sometimes spliced, an extra thread being fed to one-half of the needles during the making of these parts. This thread is usually carried in a finger which is automatically raised and lowered as the needle cylinder rotates.

This finger should be adjusted to deliver the yarn to the first needle of the back half of the hose and be raised to clear the first needle of the front half. Seconds are often made by the splicing thread being delivered too early or too late, the spliced portion overlapping the front half of the hose at one side instead of being in line with the point of the heel and toe, as shown in the accompanying illustration.

The splicing is sometimes made to overlap two needles on either side of the heel. This is accomplished by the use of two medium butt needles between the long and the short butts on either side. The adjustment for this is fairly easy, the lever controlling the yarn finger usually having an eccentric disc to regulate the height of the finger. Raising the finger will throw the splicing to one side, while lowering will bring the yarn in earlier and so throw the splicing to the opposite side.

Work of the Sinkers

The needles knitting the extra thread must be made to draw a slightly longer loop than the remainder of the needles, or the texture of one part of the fabric will be stiff and the other part slack.

The loops are drawn over the noses of the web-holding sinkers and the position of the sinkers during knitting is governed by cams in a sinker cap. The sinkers working between the needles that take the extra thread have a tapered nose so that if these sinkers are pushed further forward than the sinkers in the other half of the cylinder, the loops will be formed over the higher part of the sinkers and a longer loop will be made to accommodate the extra yarn. On some machines this is done by arranging long butt sinkers for the spliced part and short butt sinkers for the instep portion.

A supplemental sinker cam is brought into action to act on the long butts and thrust them forward when the splicing thread is being fed. On other machines the sinker cap is rocked from side to side during the making of the ankle and foot, thus moving the cam that controls the position of the sinkers, thrusting the sinkers forward while the extra thread is being knitted. The timing of the sinker movement is very important;

the sinkers must be thrust forward at the same time the yarn is fed to the needles and must be allowed to recede as the yarn is taken out. If this is not done the foot of the hose will be improperly shaped.

Common Fabric Defects

A defect common to all latch-needle machine fabrics is needle lines due to uneven or rough needles. Needles should be pliered where necessary after replacement of broken needles, and all needles should be level and equidistant. Sinkers are often the cause of lines which show vertically in a fabric, and all sinkers should be removed from the machine periodically, cleaned, and inspected.

If the needle is faulty, the line will show along the loop; if the sinker is at fault, the line will follow the wale. Slurgalling, or uneven length of loops showing horizontally, is usually caused by uneven setting of the stitch cams. This can be detected on multi-feed machines by marking the yarn at each feed at an equal distance from the needles. If all feeds are making an equal length of stitch, the mark on each yarn should reach the needles at the same time. Any irregularity can be at once noticed and the stitch cam raised or lowered as required to make an even fabric.—*The Textile Recorder.*

Looks for Reaction, but Not Depression, in Business

By George B. McCallum

President, McCallum Hosiery Co., Northampton, Mass.

We are always interested in the wide variety of forecasts which occur early each year. Some of these are from men who seem sworn to optimism, while others are from confirmed pessimists. In general, we believe that optimism is always justified in any long distance forecast regarding business conditions in America.

We began last September to study the probabilities of business for 1927, and find now we are inclined to agree with those who feel that the volume of business in 1927 will not be so large as in 1926, that the volume may vary considerably in different trades, and that it is quite likely the year will prove to be one which may be called a year of reaction in business but not one of depression. We are inclined to believe that certain businesses will find the year satisfactory because of their own particular situation in the trade they are in.

The years 1925 and 1926 were successively the largest in our history. Our early bookings for spring, 1927, considerably exceed those for 1926, so we believe that our shipments will show a good gain for this spring over the spring of 1926.

There has been some softening of prices in the hosiery trade but we believe this recession in prices will amount to a very small per cent of the selling price and that the silk hosiery manufacturers will find a satisfactory volume of business for 1927. Competition is keen but we believe it is fair competition.

What Will 1927 Bring Forth?*

By Albert R. White

Mount Hope Finishing Co., No. Dighton, Mass.

THE employes of this plant should be and probably are just as much interested in what the cotton textile situation is likely to develop for 1927 as the owners of the property, and with that in mind this story has been put together with the hope that if it isn't interesting it will at least be instructive.

Since the disastrous slump in the cotton industry in 1920 there has been an over-capacity, both for the manufacture of cotton yarn, cloth and the finishing of same, of such proportion that competition has of necessity been very keen.

With the advent and extensive use of rayon yarns, and with the more extensive use of silk yarns in silk filled goods, the consumption of fine yarns has been materially smaller, and of course, that is the main reason that there has been more idle spinning equipment than loom equipment. At times during this period the loom equipment of the country has been fairly well employed, but most of the time there have been many idle spindles.

It has been estimated that there is at least an over-capacity of from 25 to 30% in finishing equipment in this country. Considering our own normal demands, and our normal export requirements, that means that if everybody in the industry received their fair share of the business only 75% of the equipment could be operated. As that leaves 25% unoperated the overhead burden of that 25% has to be borne by the 75% that is running.

Many mills have found that if the normal overhead is 30%, and of course this is an arbitrary figure, that they must now make that normal overhead 40% to take care of the 25% of capacity not running, and therefore, the index figure of overhead should be 40% to get a true picture of the actual expense of producing merchandise.

In New England, in the main, both in the cotton manufacturing and finishing industries it can be honestly said that manufacturing methods are reasonably good. There are of course conspicuous examples where manufacturing methods are excellent, and again where they are very poor.

The ordinary American buyer of merchandise does not buy because merchandise is plentiful or because it is sold at a low price; his general purchases are made because of taste and quality. Where similar classes of merchandise of the same quality are sold at different prices the buyer will take the cheaper priced merchandise in preference to the higher priced.

If we are right in our conclusion that the manufacturing of cotton textiles in the North is in the main, efficient, and if we are satisfied that the consuming public is interested in quality coupled with style, and the price is of secondary consideration, then we must be forced to the conclusion that the trouble with prices today, as affecting the manufacture and finisher, is in the distribution of cotton textiles rather than in their manufacture or ultimate purchase price. Distribution means re-selling after the goods leave the finisher, re-selling again, cutting up the merchandise for still further re-sale in finished apparel or articles of every day use.

The Distribution Problem

There is a general impression that the retailer gets the cream, and that the manufacturer, finisher and converter receive only the skimmed milk or less.

It is certain that department store buyers have no need for guardians, and that the sales forces of the same department stores do not lack either sufficient paper or lead pencils to figure adequate selling prices, and of course, it must be borne in mind that a very considerable portion of cotton textiles are distributed, eventually, through department stores in the form of finished articles and wearing apparel, as well as in piece goods.

We hear on all sides that New England with its limited hours of labor, high taxes, high freight rates, high wages, higher standards of living for workers, cannot possibly compete with the South. Let us, however, point out that cotton manufacturers in New England are not alone troubled with the problem of taxation, North Carolina mills for instance, have grave troubles with taxation.

Some textile establishments in the South are very prosperous, many not prosperous. Many southern mills cannot pay their bills, newspapers publish column after column of news and legal notices devoted to receiverships for cotton mills, creditors' meetings and extension plans for creditors.

There was a time, a few years ago, when on Thanksgiving Day most of the stockholders of New England mills could send up a little prayer, not only for the dinner, but for the dividends that the mills had earned. This year many of those same stockholders were thankful that they had the price of the dinner, and as it was so long since they had received any dividends they had forgotten that there ever were dividends.

Capital or money won't work unless it is paid any more than labor will. In fact, capital or money will strike quicker than labor will. It is not meant by this, the owners of capital, but capital itself. Suppose the savings banks in Taunton decided that they no longer could pay interest to depositors; just how long would the depositors' money remain in the Taunton banks if the Boston banks didn't stop paying interest?

The many changes that have occurred in industrial life and in industrial methods in New England in the last few years coupled with the general tendency to take the easier way out rather than to meet issues squarely have done their full share in bringing about the present textile situation. Distribution methods, however, have done a great deal more to injure our situation than is generally realized.

New England, with its climatic advantages for cotton textile manufacturing, its rehabilitated transportation systems, its large reserves of capital, and its army of the most intelligent and highest skilled labor, second to none in the world, is compensated for the disadvantage of distance from raw materials and distance from markets.

The people of New England, whether native born or foreign born, whether managers, workers or investors, are fond of their section of the country and loyal to it, most of them would rather live in New England than any other place.

Prospects

Now as to business for 1927, there is a prospect of better business and probably quite a considerable better volume. There isn't, however, any immediate prospect of better methods of distribution, or enough better prices for our cotton textiles to make us prosperous and happy, and so we will have to plod along making every effort to improve our quality, our service and our efficiency, if New England is still to remain a great textile center.

For years textile employes in Lancashire have been taught that if England is to maintain its supremacy as the leading world distributor of cotton textiles, workers must be prepared to work for less wages than in the United States, and also to see the cream of their product exported and only the ordinary product consumed at home.

We cannot, in America, attempt to teach that doctrine or even support it, because we are primarily home market people, and because we have made it possible for our workers to live in comfort and limited luxury. We can, however, demand of our workers that if the present standards of living are to be maintained we must have their full confidence and cooperation, when we have that, we will have courage to tackle the problem of distribution with the same vigor that we have always attacked our difficult problems, from the time we began to subdue the Indians up to the present time, and New England will continue to be that delightful quaint Garden of Eden that she has always been.

* Reprinted from *The Mount Hope News*

Textile Associates to Meet

PROVIDENCE, R. I.—The organization known as the Associated Textile Executives will hold their quarterly meeting at the Hotel Biltmore this city, Saturday, Feb. 5. D. F. Griffith of J. & P. Coates, Inc., will speak on welfare activities. The gathering will take place at 2 o'clock and will be followed by a social time, the greater part of the membership of 40 likely to be present. The secretary of the association is Paul C. Wilde of Winchester, Mass.

TEXTILE WORLD Cotton and Wool Index Numbers

COTTON INDEX NUMBERS

Date 1914	Cotton	Yarns	Gray Goods	Colored Goods	Aver. for Cloths	Group Average
July 31.....	100	100	100	100	100	100
1919						
January	235	278	280	295	288	279
April	228	221	228	238	233	226
July	283	321	372	292	330	321
October	278	324	387	320	351	337
1920						
January	314	448	464	411	435	427
April	339	531	498	416	455	460
July	327	425	405	423	414	407
October	190	229	248	362	308	282
1921						
January	131	142	176	203	190	175
April	97½	116	138	182	161	147
July	97½	112	133	176	155	141
October	160	179	198	208	203	193
1922						
January	146	168	174	206	191	182
April	144	156	168	209	189	178
July	178	182	190	200	195	189
October	177	192	206	201	203	197
1923						
January	225	225	220	230	225	225
April	231	239	224	242	233	234
July	217	197	190	236	212	211
October	237	222	212	225	219	219
1924						
January	278	241	228	243	236	239
April	220	211	192	194	193	198
July	270	198	186	191	189	196
October	195	196	187	189	188	199
1925						
January	192	197	195	173	184	187
April	196	194	193	180	187	188
July	197	183	185	176	181	182
October	174	189	193	178	186	186
1926						
January	167	175	177	162	170	171
April	153	163	161	155	158	159
July	149	149	151	141	146	147
October	106	141	147	144	146	143
1927						
January	107	134	140	140	140	138

JANUARY INDEX NUMBERS

NEITHER the cotton nor the wool groups of index numbers show any marked changes during January, but the trend is upward and if the firmer price position of raw materials stimulates increased demand for yarns and cloths then it is also likely to harden values of the latter.

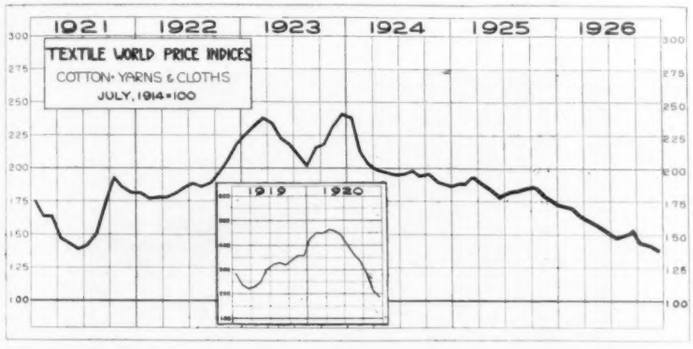
The wool indices show the least change with an advance of 1 point in the raw material and in tops and a decline of the same amount in yarns; cloths and the group average remaining unchanged as compared with December. At the close of the month wool and top values were distinctly firmer with indications that cloth values would follow, but to lift yarn prices there must be a decided increase in demand.

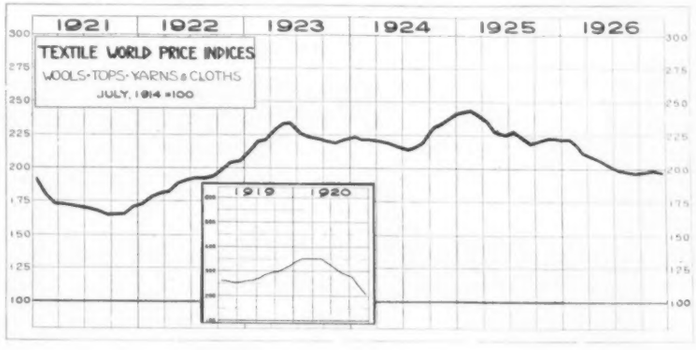
The 7 point advance in the monthly average for raw cotton and the much greater advance at the end of the month, is reflected only slightly in the cloth indexes for the month and not at all in the yarn index. Should cotton advance further or remain firm, however, the advancing tendency noted in yarns and cloths at the end of the month must increase, and it is not impossible that they may continue to advance even though cotton prices suffer a temporary set-back.

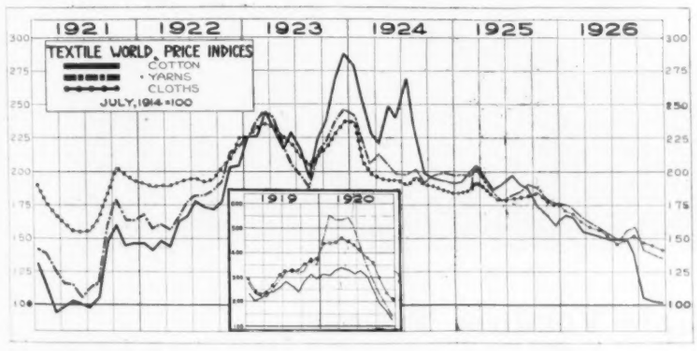
Inquiries regarding interpretations and use of the index numbers may be addressed to TEXTILE WORLD, Statistical Department, 65 Franklin St., Boston, Mass.

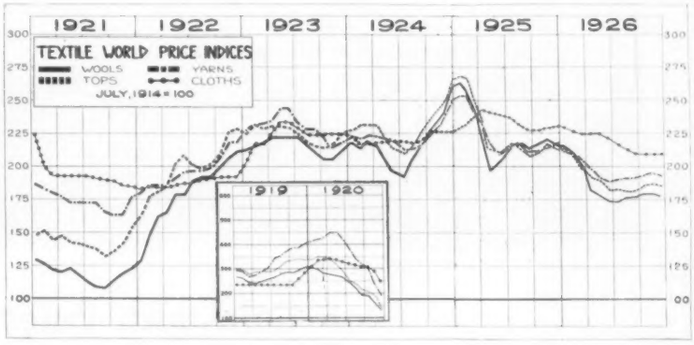
WOOL INDEX NUMBERS

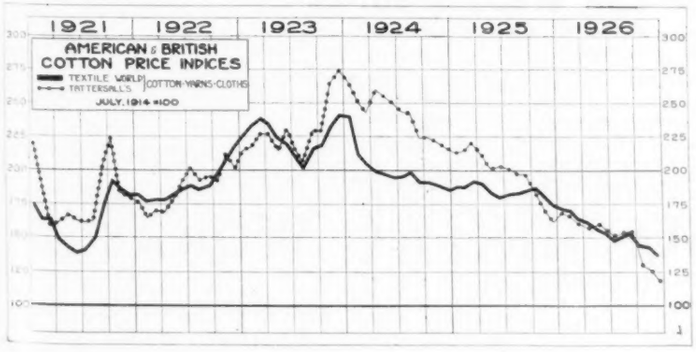
Date 1914	Wool	Tops	Yarns	Cloth	Group Av'ge
July 31.....	100	100	100	100	100
1919					
January	272	296	290	237	273
April	242	282	273	237	255
July	269	290	238	237	272
October	286	338	384	240	294
1920					
January	304	335	412	310	336
April	276	334	448	331	352
July	241	258	384	320	315
October	189	213	302	304	276
1921					
January	129	148	186	224	193
April	120	148	177	192	173
July	112	139	172	192	170
October	114	135	162	188	165
1922					
January	128	163	179	182	173
April	165	185	185	184	182
July	189	202	196	188	193
October	199	209	208	191	199
1923					
January	212	225	227	203	213
April	222	230	234	225	228
July	222	223	233	228	227
October	205	213	222	224	220
1924					
January	217	227	221	223	223
April	216	230	223	219	221
July	191	209	212	219	213
October	227	237	224	226	228
1925					
January	264	268	253	228	244
April	219	234	230	241	233
July	216	217	216	239	227
October	216	212	212	227	220
1926					
January	215	213	211	229	221
April	181	193	198	224	208
July	173	184	189	215	199
October	178	186	193	209	198
1927					
January	178	187	190	209	198

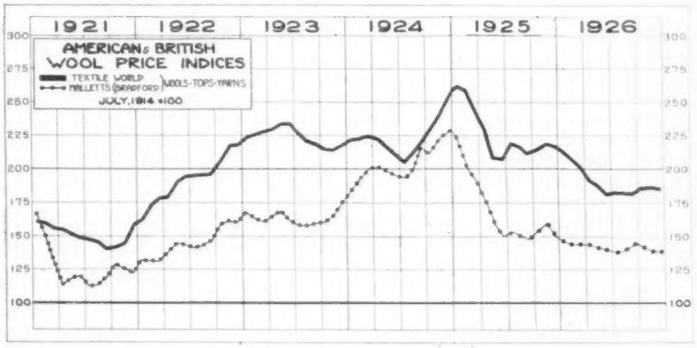




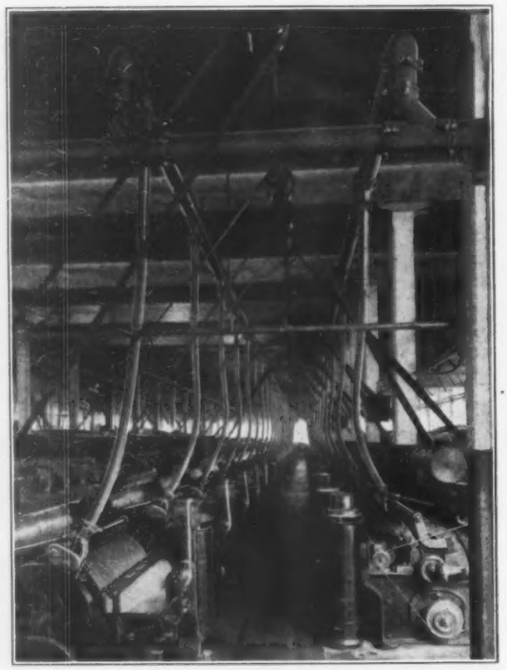








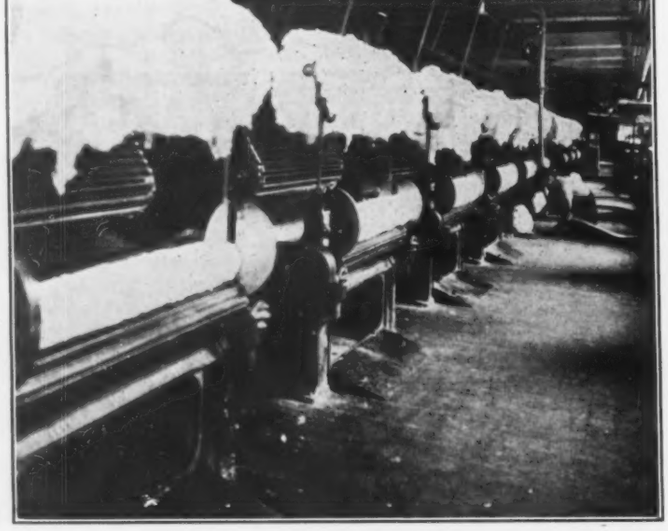
OVER 450 MILLS USE OUR EQUIPMENT



CARDS EQUIPPED WITH VACUUM STRIPPER—VALVED HOSE CONNECTION

CLEANING

PICKING UP FLAT STRIPS



COLLECTING UNDER-SCREENINGS

SWEEPING—FLOORS AND WALLS

Cook-Goldsmith Patent Triple Vacuum System for Stripping Cotton, Waste and Woolen Cards,

Collecting under screenings—Flat strips—Picker motes, etc., general machinery cleaning, floor and wall sweepings.

Card tenders operate 36 cards.

One man and one pump can strip 154 cards three times daily in 3½ hours, leaving balance of day to devote to other waste-collecting operations.

Uses of this system are rapidly expanding to cover most every conceivable operation where a powerful air-intake can be utilized to collect waste and to prevent spoilage of manufactured products when cleaning machinery—waste trucks displaced, saving floor space, investment, and cost of transportation—companion receivers used to give continuous pump operation—multiple receivers used for colored work separation.

Let us tell you how an investment in this system or a changeover in your present system will soon pay for itself.

ABINGTON TEXTILE MACHINERY WORKS

FRED H. WHITE — *General Manager*

50 Congress St.
Boston, Mass.

Factory at
ABINGTON, MASS.

Independence Bldg.
Charlotte, N. C.

THE PERSONAL PAGE

C. A. Cannon has been elected president of the Efird Mfg. Co., Albemarle, N. C., taking the position formerly held by J. S. Efird until the latter's death Jan. 19. Election was held at Albemarle, Jan. 28.

At the recent meeting of directors of the Franklin Cotton Mills, Concord, N. C., at which C. A. Cannon was elected president, A. L. Brown was chosen vice-president; G. B. Lewis, treasurer, and T. T. Smith, secretary.

At a meeting of directors of the Revolution Cotton Mills, Greensboro, N. C., on Jan. 28, J. W. Cone was elected president; Herman Cone, vice-president; Sigmund Sternberger, treasurer; J. E. Hardin, secretary and F. J. Blackwood, assistant secretary.

The following officers were elected at the annual meeting of the Algonquin Printing Co., Fall River, Mass.; President, Edward B. Jennings; treasurer, William H. Jennings; directors, Edward B. Jennings, William H. Jennings, William L. S. Brayton, Charles L. Baker and Thomas R. Burrell.

J. P. Nichols was reelected president of the Griffin (Ga.) Mfg. Co., at its annual meeting last week. W. G. Nichols, general manager of the mills since 1914, resigned. John H. Rogers was reelected secretary and treasurer; B. R. Blakely was named vice-president and Hal Riviere was appointed superintendent. The board of directors elected consists of J. H. Nunnally, of Atlanta; George Grey, New York; T. H. Harwood, New York; J. P. Nichols, Griffin; B. R. Blakely, Griffin; John Rogers, Griffin; Hal Riviere, Griffin; Seaton Bailey, Griffin; Nathaniel Bailey, Griffin.

At the annual meeting of directors of the Locke Cotton Mills Co., Concord, N. C., held last week, the following officers were chosen: President, W. E. Erwin; vice-president, D. B. Coletrane; secretary and treasurer, T. H. Webb; assistant secretary and treasurer, C. W. Byrd.

Thos. H. Ball, Philadelphia, president of the National Association of Worsted & Woolen Spinners, and Mrs. Ball, have left for their usual winter vacation which they spend at Palm Beach, Fla. They plan to stay three weeks.

Victor J. Hopkins has been elected vice-president of the Klots Silk Mfg. Co., Inc., Clifton, N. J. Mr. Hopkins was formerly a member of Hopkins-Cohn Fabrics Co., selling agents for Klots, but the firm's selling arrangements have been changed. Mr. Hopkins is now in charge of the New York office and sales and is located in the quarters at 351 Fourth Ave. formerly occupied by the Hopkins-Cohn Company. Harold Cohn is no longer with the business.

W. B. Weissblatt, assistant treasurer of the Contoocook Mills Corp., Hillsboro, N. H., has been elected treasurer of the company, succeeding H. E. Fisher. In addition to Mr. Weissblatt, the following were elected directors for the ensuing year: Eugene H. Clapp, Henry E. Fisher, Charles P. Hutchins, Walter M. Parker, Henry D. Rodgers, and president, Thomas W. Streeter. H. E. Fisher was reelected clerk.

A. R. Howard, treasurer of the Gibson Mfg. Co., Concord, N. C., has been elected president of the Merchants & Manufacturers Club, of Concord.

Officials of the Interlaken Mills, Providence, R. I., were guests of the Interlaken Club, an organization composed of department heads and operatives of the plants of that firm in the Pawtuxet Valley, at a social in the club house on Jan. 28. Among the guests were Capt. Oscar Winterbottom, of the British Army; Mark Brickhill, England, general manager; Harris H. Bucklin, Providence, assistant treasurer; Ernest A. Palmer, Providence, treasurer of the Arkwright Finishing Co., and Maynard C. Hartley, auditor. About 250 attended.

At the recent meeting of directors of the Merrill (Wis.) Woolen Mills Co., Albert Anderson was reelected president. Other officers elected at the meeting were as follows: J. A. Emerich, vice president; Max Van Hecke, secretary; Mrs. Ida Cramer, treasurer. The directors include the above named officers and Peter Olson.

Louis E. Gladu has been named vice-president and sales manager and Albert E. Lownes treasurer of the American Silk Spinning Co., Providence, R. I.

At the first annual meeting of the Roseboro (N. C.) Cotton Mills, Inc., all officers were reelected. The mills have recently been placed on regular time schedules.

At the annual meeting of the J. G. Leinbach Co., Reading, Pa., the following directors were elected: A. Elsworth Leinbach, Charles H. R. Leinbach, Charles E. Leinbach, Samuel W. Reiff and Harry Levan. The directors will reorganize on Feb. 14.

Prominent textile men elected directors of the Adirondack Power & Light Corp., at the annual stockholders' meeting held at Schenectady, N. Y., included J. H. Reaney, general manager of the Union Mills, St. Johnsville, N. Y., and A. V. Morris, of A. V. Morris & Sons, Amsterdam.

Jules Kahn, director and sales manager of the Dexdale Hosiery Mills, Lansdale, Pa., has tendered his resignation, effective Feb. 1. Mr. Kahn has been associated with the Dexdale company since 1919. He has no definite plans for the future.

C. W. McSwain, of Greenville, S. C., has accepted the position of general manager of Pendleton Mfg. Co., Autun, S. C., effective Feb. 1. Mr. McSwain succeeds the late Benjamin M. Aull, who died a few weeks ago.

Walter Van Reed High, for many years connected with the Robesonia (Pa.) Knitting Mills, has engaged in the automobile and accessory trade in Robesonia.

Clifton D. Pierce has joined the cotton firm of George H. McFadden & Bro., and will be connected with the office at New Bedford, Mass. Mr. Pierce has had long experience in classing cotton and has traveled through the south and been active in the tendering and taking up of cotton on the New York Cotton Exchange.

J. V. Smeallie, publicity director of the Mohawk Carpet Mills, Amsterdam, N. Y., is on an extensive tour of industrial cities in the Middle West, where he is giving illustrated lectures on "The Art of Rug Weaving."

William V. Hanes, for the last eight years associated with the North Star Woolen Mill Co., with plant at Minneapolis, Minn., has recently become sales manager for the Beacon Mfg. Co., whose mills are located at New Bedford, Mass., and Swannanoa, N. C.

Josephus Daniels Pell, manager of the Hillcrest Silk Mills, High Point, N. C., and Miss Mary Elizabeth Long of High Point, N. C., will be married on Feb. 19.

Thomas E. White, who has been with T. Eaton Co., Toronto, Canada, as assistant manager in their thread department for the last seven years, has been appointed superintendent of the Lyseth Thread Co., Worcester, Mass. Mr. White served his apprenticeship with J. & P. Coates, Paisley, Scotland. Before coming to the United States and Canada, he was sent by them to Italy, where they had opened their new mill, serving as assistant manager. He brings to his new connection the accumulated experience of a successful career.

John C. Bauer, who has been assistant superintendent of the plant of the Boston Duck Co., Bondsville, Mass., has been appointed superintendent of the Palmer Mill (Otis Co.), Three Rivers, Mass.

Fred E. Webster, who has been overseer of weaving at the Turners Falls (Mass.) plant of the Griswoldville Mfg. Co., has been promoted to assistant superintendent.

William Pineau, superintendent of the Parker Mills, Warren, R. I., has tendered his resignation, effective Feb. 29. He will be succeeded by Edward Lynch, formerly assistant superintendent of Plant B of the Parker Mills, Fall River. Mr. Pineau has been associated with the Parker Mills for 25 years. He has made no definite plans, but expects to make a trip to England shortly.

J. D. Whitmire, of Mills Mill, Greenville, S. C., has been elected president of the Greenville Textile Club, an organization composed of superintendents, overseers and others of the mills around Greenville.

At a business meeting and banquet on Jan. 28 the following officers were elected by the Dunean Mills Textile Club, Greenville, S. C., for the coming year: S. M. McDaniel, president; R. R. Adkins, vice-president; L. W. Davis, secretary and treasurer; R. W. Donnan, assistant secretary and treasurer. E. A. Franks, superintendent of the mills, presided.

Jesse Noonan has been elected president for the fourth consecutive year of the Employes' Council of the Lancaster Mills, Clinton, Mass. Other officers elected are: vice president, Paul Lynskey; secretary, Elizabeth Flannigan; treasurer, Doris M. Bates.

Edward T. Willson, Jr., has resigned his positon as manager of the service department of the Lancaster Mills, Clinton, Mass., to accept a similar one in a woolen mill in Passaic, N. J., on March 1. His assistant, Miss Doris M. Bates, will continue the duties for the present.

Wiley H. Marble, an engineer for the Curtis & Marble Machine Co., Worcester, Mass., and a son of Edwin H. Marble, president of the company, has been appointed Massachusetts commander of the Military Order of the World War, succeeding Eben S. Draper, Hopedale, Mass.

James A. Andrews, former superintendent of carding and spinning in the Laconia division of the Pepperell Mfg. Co., Biddeford, Me., has resigned to become general superintendent of the carding and spinning departments of the Edwards Mfg. Co., Augusta, Me. He has been with the Pepperell company over 30 years.

Arthur Jacob has taken the position as overseer of carding for Joseph Simpson Sons, Toronto, Ont., Canada.

D. F. Short (not D. F. Farr, as recently reported in error) is overseer of weaving in the Fountain Cotton Mills, Tarboro, N. C.

W. Sanford Woodbury has taken the position as superintendent of J. S. Gary & Co., Alberton, Md. Mr. Woodbury comes from Lawrence, Mass.

S. B. Hammond, formerly overseer of weaving for the Dora Cotton Mills Co., Red Springs, N. C., now holds a similar position with the Shelbyville (Tenn.) Mills, Inc.

N. C. Crolley, night overseer of spinning in the Hermitage Cotton Mills, Camden, S. C., has been made day overseer of spinning in that plant.

J. D. Arwood has resigned as overseer of carding in the Cleghorn Mills, Rutherfordton, N. C.

Fred H. Heine, former overseer for C. K. Eagle, Inc., Shamokin, Penn., and family, who left on Dec. 29 for Shanghai, China, where he was to take charge of the raw silk department of the corporation were due to arrive there Jan. 28 but on account of the uncertain conditions in that country officials announce that it would probably be necessary for him to abandon the Shanghai office and take refuge with his family in Japan until conditions become more settled.

B. F. Stephens has taken a position as overseer of weaving with the Phenix Mills Co., King's Mountain, N. C.

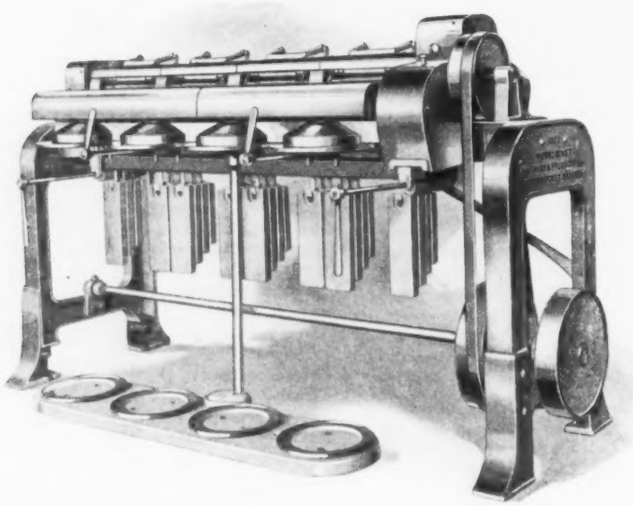
W. A. Hunt has resigned his position with the Arnall Mills, Sargent, Ga., to become overseer of carding in the Ensign Cotton Mill, Forsyth, Ga.

W. S. McKane has taken the position as overseer of weaving for the Sawyer Mills, American Woolen Co., Dover, N. H. Mr. McKane was formerly employed at Proctorsville, Vt.

E. Deaton has taken a position as night overseer of spinning in the Hermitage Cotton Mills, Camden, S. C. He was formerly employed in the Lancaster (S. C.) Cotton Mills.

Ed Hargarett, formerly overseer of the picking room of the Winnsboro (S. C.) Mills, has taken a position as overseer of carding in the Cleghorn Mills, Rutherfordton, N. C.

"WOONSOCKET"



The New Model Woonsocket Drawing Frame is designed to meet the demand for a machine Easy and Safe to operate; to give Longer Life; and to produce Sliver of the Highest Quality. It incorporates the following:

Desirable Features

Back Spoon Stop Motion
Trumpet Stop Motion
Full Can Stop Motion
Adjustable Floor Stands
Self-Aligning Shaft Bearings

Exclusive Features

Patent Cast Iron Weight Hooks
Patent Weighing Device
Calender Roll Cover Safety Stop Motion
Gear Cover Safety Stop Motion
Hardened and Ground Spoon Knives

Measuring Stop Motion with Target and Hank Clock

COMPLETE

EQUIPMENT

Main Office and Export Agent
Pawtucket, R. I.

WOONSOCKET MACHINE AND PRESS CO., INC.
Opening and Picker Room, Carding, Drawing and Roving Machinery

FALES & JENKS MACHINE COMPANY
Spinning and Twisting Machinery

EASTON & BURNHAM MACHINE COMPANY
Spooling, Warping and Winding Machinery

COTTON

MACHINERY

Southern Office
Woodside Bldg.
Greenville, S. C.

MILL NEWS

COTTON

New Construction and Additions

ALABAMA CITY, ALA. The Dwight Mfg. Co. will begin at once the erection of 50 new houses for employes. The contract has been awarded to the Fiske-Carter Construction Co. These houses are in addition to 50 others now being built.

*ALBANY, ALA. Satisfactory progress is reported on the construction of the new plant of the Connecticut Mills Co. which is being built under contract by W. K. Adams, of Atlanta, and it is expected that it will be ready for operation by June 1.

HUNTSVILLE, ALA. The only immediate expansion of the Lincoln Mills of Alabama covers a reinforced concrete mill, to be known as No. 3, of three stories and basement, 132 x 240 ft., to be equipped at the start with 10,000 spindles and a few additional duck looms; also houses for the increased working force. The number of the latter and of the new looms have not been decided definitely. The company's capitalization is not to be increased, and the report that their expansion program "will involve in the next few months an expenditure of about $5,000,000" is greatly exaggerated.

*LOS ANGELES, CAL. The Goodyear Textile Mills Co. has awarded a general contract to W. Douglas Lee, Textile Center Building, for the erection of the proposed five-story addition to its mill to be 101 x 201 ft., reinforced concrete, estimated to cost $200,000, with equipment.

ATLANTA, GA. The Department of Justice Appropriation bill introduced in Congress at Washington, authorizes the use of $20,000 from the working capital fund of the Federal prison here for an extension of the cotton duck mill. Last year the use of $6,000 for this purpose was authorized and the foundation of an addition to house new wide looms was started. It was found that this sum was inadequate and that the estimate had been too low, and in order to complete the building the use of $20,000 from the revolving fund is authorized in the current bill.

COLUMBUS, GA. The Muscogee Mfg. Co. is installing a number of additional looms in its plant.

TRION, GA. It is reported that the Trion Co. will add about 25,000 spindles to its present equipment. The mill makes sheetings, drills and osnaburgs.

CHARLOTTE, N. C. The National Fabric Corp. of New York, has purchased a tract of 110-acres on the Mount Holly road, about four miles from Charlotte, as a site for a 100 jacquard loom mill. Construction will start April 1 and it is expected that the mill will be in operation about July 1. The initial unit will have approximately 25,000 ft. of floor space, will be one story in height, of saw-tooth design and fire-proof construction. Plans provide for future enlargement.

CONCORD, N. C. The Cabarrus Cotton Mills are installing additional cotton cleaning machinery.

*KANNAPOLIS, N. C. With the large addition to the mill of the Cannon Mfg. Co. nearing completion, the erection of 150 new dwelling houses has begun.

ROCKINGHAM, N. C. The Hannah Pickett Mills have just completed the installation of 200 additional new looms in their plant, giving them a total of 2000 looms.

BELTON, S. C. The Blair Mills are constructing two new brick warehouses with a total floor space of 10,000 sq. ft., and a picker room with 5,184 sq. ft. space. Modern cleaning machinery will be installed in the picker room as soon as it is completed.

CLIFTON, S. C. The Clifton Mfg. Co. will add several slashers to its present equipment.

CLINTON, S. C. The Clinton Cotton Mills will start construction of ten four-room cottages for operatives at an early date and it is believed that others will be erected later.

GREER, S. C. The Victor-Monaghan Co. has awarded contract for the erection of 15 houses for night operatives of the Victor Plant.

WILLIAMSTON, S. C. The Williamston Mills have started construction of a new opening room, 22 x 100 ft., to take care of their opening and preparatory machinery. No additional spindles or looms are to be added.

WINNSBORO, S. C. The Winnsboro Mills through Lockwood, Greene & Co., engineers, Boston, have awarded contract to the Electrical Construction Co., Charlotte, N. C., for installation of a fire protection system, to cost $11,000.

*CHARLOTTESVILLE, VA. The new plant of Titus Blatter & Co., New York, for which construction contract was recently awarded, will be one story high and will have 21,000 sq. ft. floor space. Equipment will consist of 70 looms and auxiliary machinery. Lockwood, Greene & Co., New York, are the engineers in charge.

* Indicates previous mention of project.

Fact and Gossip

OPP, ALA. It is reported that the capacity of the Opp Cotton Mills will be approximately doubled.

SCOTTSBORO, ALA. Scottsboro business interests have received a proposition from an eastern cotton mill whose owners are anxious to find a suitable location in the south, according to information given out here. An attractive offer has been made, it is said, and it will be put up to the people of Scottsboro at an early date. The name of the concern has not yet been disclosed.

ATLANTA, GA. Textile mills in Atlanta will receive an immediate increase of 50% in their water rate as the result of action just taken by the city council.

LA GRANGE, GA. It is reported that I. Wilkes and H. Childs, who recently bought the Park Cotton Mills, have sold the machinery to C. L. O'Neal, treasurer of the Enterprise (Ala.) Cotton Mills, and that the latter will transfer the machinery to his mills. It is understood that Messrs. Wilkes and Childs will install 5,000 new spindles in the Park plant.

NEW BEDFORD, MASS. Interests identified with the General Motors Corp., Detroit, are said to be arranging the purchase of a local mill, to be used for the manufacture of tire fabrics.

MANCHESTER, N. H. The State Legislature is considering a bill to permit cities in the State to exempt manufacturing plants from taxation for a period of 10 years. In a discussion of the new measure, it was pointed out that the Salmon Falls Mfg. Co., Salmon Falls, paid 67 cents in taxes last year for each dollar expended by the municipality.

ALBANY, N. Y. The Industrial Survey Commission has completed a census of principal textile centers obtaining opinions on a 48-hour week for women which will be presented to the Legislature. Many manufacturers contend that they will be forced to locate in the South if a law establishing a 48-hour week becomes effective.

BURLINGTON, N. C. E. S. Parker, Jr., attorney for Receiver Lynn B. Williamson, of the Elmira Cotton Mills Co., Burlington, has been authorized by Judge E. Yates Webb, of the federal court of the western district of North Carolina, to settle a tax account with the federal government for the sum of $34,000. This covers taxes due by the bankrupt textile concern, from Feb. 1, 1919, to Feb. 1, 1924.

CONCORD, N. C. The Locke Cotton Mills Co. contemplates an addition to its plant in which will be installed about 25 cards and auxiliary machinery.

KING'S MOUNTAIN, N. C. The King's Mountain Mfg. Co. contemplates the addition of some cards to their present equipment.

RONDA, N. C. The property of the Ronda Cotton Mills, Inc., consisting of mill buildings, realty, equipment, machinery and tenements will be sold at a receiver's sale on Feb. 19.

PHILADELPHIA, PA. A. W. Butterworth & Co., 10th & Diamond Sts., manufacturers of plush, are now running eight of their ten looms on cotton plush, having for the first weeks after starting business, operated them exclusively on worsted goods. This is a new company, having recently started operations at this location.

WOONSOCKET, R. I. Following the announcement that the mills of the Manville-Jenckes Co. in Woonsocket may be closed unless "better terms" are provided for the company within 30 days, and in line with the suggestion offered by Frederick L. Jenckes, treasurer of the company, John C. Cosseboom, who presided at the conference, appointed a committee of 15, including the Mayor of Woonsocket, to see what can be done to hold the mills in Woonsocket.

WOOL

New Construction and Additions

NASHUA, IA. The Nashua Woolen Mills, which were destroyed by fire early in December, have received a new carding machine and are preparing to resume operations in another building.

EAST DOUGLAS, MASS. The Hayward Woolen Co. is installing 42 new Crompton & Knowles automatic looms in its plant and plans to discontinue night work in the weave room when they are set up.

ALBANY, N. Y. The new addition at the plant of the Albany Felt Co. will be for office purposes only, and no manufacturing will be carried out in the structure, as previously announced.

Fact and Gossip

CENTRAL VILLAGE, CONN. The Farnsworth Mills, manufacturers of fine woolen, have suspended operations.

MOODUS, CONN. The Gordon Woolen Mills, Inc., North Oxford, Mass., have moved their stock and warps to Moodus, Conn., where they have reorganized as the Lester Woolen Mills, Inc., and taken over the mill formerly operated by the Arthur Woolen Co. W. H. McDermott, of Uxbridge, Mass., who recently bought the Arthur plant at auction, will act as superintendent for the Lester company.

FRANKLIN, MASS. The H. T. Hayward Co., which was incorporated on Jan. 6, with a capital stock of $400,000, has organized by the election of the following officers, who are also directors: President, Harry T. Hayward; vice president, Wendell Williams, Milford, Mass.; treasurer, Leroy W. Stott, who has been agent for the mills.

WEST WARREN, MASS. The Ohio Carpet Co., with increased business, is said to be negotiating for a lease of two rooms at the No. 3 mill of the Thorndike Co., which has been idle for some time. This would almost double the present capacity.

JAMESTOWN, N. Y. The Broadhead Worsted Mills are running on a full time basis of about 10 hours per day, with no work on Saturday, or an actual schedule of 49 hours and 10 minutes weekly. Other local worsted mills are operating on a like schedule.

RENSSELAER, N. Y. The Albany Woolen Mills are operating at capacity while new workers are being added on both day and night shifts.

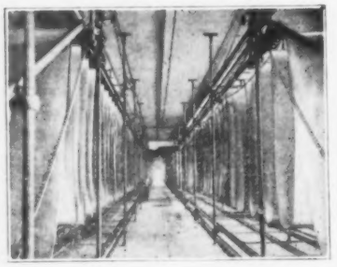
KNIT

New Construction and Additions

TAMPA, FLA. The Tampa Knitting Mills, which started the manufacture of children's union suits at 11th Ave. and 20th St., last fall, has an equipment of 19 circular knitting machines and 30 sewing machines. A. Mortellaro buys 14s and 16s yarn. Product is sold direct. The new company is in the market for the following: Yarn, napping machine, sewing machines, stop motions, dyestuffs and chemicals, soaps, boxes, box shooks, etc.

COLLEGE PARK, GA. The Egan Cotton Mills will begin construction of a

WALDRON



Waldron Single-Deck Festooning Machine

Photograph shows portion of all metal Straight-Line Type Machine—absolutely in line and perfectly rigid. Note sticks returning mechanically under Festoons in opposite direction to goods.

JOHN WALDRON CORPORATION
New Brunswick, N. J.

Builders, Since 1827, of Quality Machines for Embossing, Coating, Printing Paper and Textiles—Calenders, Winders, Slitters—Festooning Machines for Paper and Fabrics. Special Machinery.

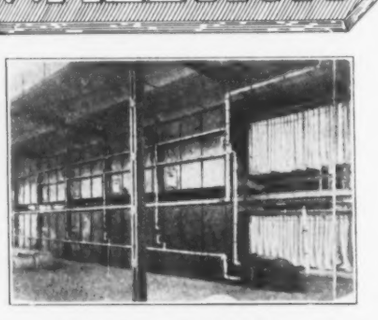
MACHINES

Brushing Machines
Calender Rolls
Cloth Pilers
Winders & Doublers
Dyeing, Drying and Bleaching Machinery

CENTENNIAL Waldron Machines 1827 1927 ANNIVERSARY

Finishing Machinery
Embossing Machines
Printing Machines
Folding Machines
Silk Machinery
Loopers

WALDRON



"Case" Enclosed Short-Line Dryer

showing double tier of enclosed mechanical festoons carrying goods and providing sectional control of drying to any degree desired.

JOHN WALDRON CORPORATION
New Brunswick, N. J.

Builders, Since 1827, of Quality Machines for Embossing, Coating, Printing Paper and Textiles—Calenders, Winders, Slitters—Festooning Machines for Paper and Fabrics. Special Machinery.

MACHINES

Mill News—Continued

30 x 160 ft. addition to their plant within the next 30 days. The new wooden building will be equipped with knitting machines for making padding for the laundry trade.

GRIFFIN, GA. The Spalding Knitting Mills have bought a building on East Broad St. and it is understood the present capacity will be greatly increased.

*DES MOINES, IOWA. The one-story addition to the Rollins Hosiery Mills is nearing completion. Lockwood, Greene & Co., Chicago, are the engineers in charge.

MEDFORD, MASS. The Mystic Knitting Co. has recently started the manufacture of sweaters in leased quarters at 18-20 Ship Ave., equipped with four horizontal knitting machines. Wm. Horstmeyer, proprietor, buys 2-18s, and 2-26s wool yarns and 300 denier rayon yarn. Product is sold direct.

KANSAS CITY, MO. According to K. A. Mezher, 411 Continental Bldg., a knitting mill for the manufacture of shawls, scarfs, sweaters and ties will be established here next spring. It will have about 5,000 sq. ft. of floor space and cost about $50,000. Joseph Azar, formerly associated with the F. A. Kalil & Co., New York, will be interested with the new company.

LYNCHBURG, VA. The Wearproof Hosiery Mills, Reading, Pa., started operation of a branch plant in leased quarters at Lynchburg on Jan. 28, with an equipment of 60 new knitting machines, 40 ribbers, 8 loopers and 4 sewing machines. Additional equipment will be added. Leroy Miller, formerly superintendent of the company's Reading plant, is superintendent of the new mill.

Fact and Gossip

NEWARK, N. J. The Arrow Silk Hosiery Co. has disposed of its former three-story mill at Badger and Hawthorne Aves., on site, 25 x 100 ft., to Enstice Brothers, local contractors, and will discontinue operations entirely at this location. The company recently completed a new knitting mill in the Irvington district, where production is being concentrated.

PATERSON, N. J. In a court hearing in connection with the recent receivership proceedings against the Variety Knitting Corp., Vice-Chancellor Lewis has announced that he will not permit any manipulation to wreck the company, as evidence tended to show, and has continued Wood McKee as receiver under the equity power of the Court. The plant is operating and with orders ahead, it is stated, will soon be in position to meet its obligations.

AMSTERDAM, N. Y. It is reported that A. V. Morris & Sons have received a permit to start improvements to mill property which will allow an increase in production.

COHOES, N. Y. The plant of the William Moore Knitting Co. has been leased to Nirenburg & Salzman, shirt manufacturers, of New York, who are now installing machinery in the former knitting mill.

NEW YORK, N. Y. Ira A. Hawkins, Jr. has been appointed receiver for the Brown Knitting Mills, 416 East 176th St., in bond of $3,000.

NEW YORK, N. Y. Raymond Wise has been appointed receiver for the De-Luxe Knitting Mills, 43 W. 27th St., under bond of $1,500.

NEW YORK, N. Y. Fire last week damaged a portion of the machinery and stock at the plant of the Warshaw Knitting Mills, 88 University Place. An official estimate of loss has not been announced. The loss will be replaced.

BANGOR, PA. Julius Kayser & Co., hosiery, underwear and glove manufacturers, are removing the silk glove machines from their Crown mill plant here and will install full-fashioned machines in this space for the manufacture of hosiery.

*READING, PA. The bond of John L. Rhoads, Reading, receiver for the Comfort Underwear Co., has been reduced from $20,000 to $10,000. The receiver having converted the company's assets into cash and paid off judgments and mortgages, the balance of assets remaining is only $6,580.93.

SILK

New Construction and Additions

WATERVLIET, N. Y. A lease of additional space in the Barker Building has been taken by the General Spun Silk Corp., which is planning expansion.

WHITEHALL, N. Y. The Champlain Silk Mills are co-operating with the Whitehall Progress Co. in plans for an extensive building project in order to make additional tenements available for the use of the firm's employes. The work will be started this spring.

PERKASIE, PA. Plans are being drawn by A. Oscar Martin, Hart Building, Doylestown, Pa., architect, for a new local silk mill, one-story, 65 x 100 ft., to be constructed and owned by the Perkasie Industrial Co., and occupied by a silk company, name temporarily withheld, under lease.

Fact and Gossip

PATERSON, N. J. The Atlas Warping & Winding Co. is increasing production at its mill and has made a number of additions in the working quota.

PATERSON, N. J. The Carmel Silk Co. has taken on a night shift in addition to regular day force, to be employed for an indefinite period.

PATERSON, N. J. The G. G. G. Silk Mfg. Co. has adopted a night shift at its mill, in addition to regular day schedule, the increase to be continued indefinitely.

PATERSON, N. J. The M. K. Silk Co. has established a night shift at its mill on Montgomery St., in addition to the regular day working force, the increased production schedule to be continued indefinitely.

*PHILLIPSBURG, N. J. The Federal Court has appointed Ralph Smith, Jersey City, N. J., ancillary receiver for the Triangle Silk Co., a Pennsylvania corporation with mill at Wind Gap, Pa., to cover the assets of the company in New Jersey, consisting largely of silk to be dyed, now stored at Phillipsburg. An involuntary petition in bankruptcy was filed recently against the company.

LOCK HAVEN, PA. The Lock Haven Silk Mills have discontinued overtime night production until further notice. The Susquehanna Silk Mills, also, have released the night shift at their local mill.

READING, PA. Officials of the Stunzi Sons Silk Co., at the main plant of the

* Indicates previous mention of project.

Mill News—Continued

company, West Reading, issued a statement saying that erection of the proposed large new mill of the company at Ephrata, does not mean that the West Reading mill is to be sold or closed. The West Reading mill, doubled in size a few years ago, is to stay in operation as the company's principal plant.

DYE, BLEACH AND FINISH

New Construction and Additions

*FISKDALE, MASS. Golding Bros., New York, who purchased the No. 1 mill of the former Fiskdale Finishing Co. on Sept. 15, 1926, expect to begin operations on or before April 1. The plant is now being equipped with machinery.

*PATERSON, N. J. The proposed enlargement to the plant of the John Adler Piece Dye Works will provide for about double the present output, which is averaging about 375 pieces of tin weighting of georgette per day.

NEW YORK, N. Y. The Bronx Co. has been reorganized under the name Bronx Finishing Corp., which has been incorporated under New York laws with authorized capital of 3,000 shares of preferred stock at $100 per share and 2,000 shares of common stock, no par value. Eugene C. Myrick, who is mainly responsible for the reorganization, is president and treasurer of the Bronx Finishing Corp. Rolland D. Rice, his associate in the firm of Myrick & R. D. Rice, is vice-president of the new company and Arthur T. Bolton is secretary. The board of directors is made up of the following: William H. Bolton, former president and treasurer of the Bronx Co., Samuel L. Hayes, superintendent of the plant, and Louis H. Olzendam. The company is now installing machinery for a silk and rayon goods finishing department, and the plant, which formerly ran almost entirely on medium grades, will hereafter process the finest fabrics for the dress goods, shirting and lining trades. Mr. Olzendam, who is a silk and rayon specialist, will have charge of the new division of the plant processing such fabrics.

PONTIAC, R. I. B. B. & R. Knight, Inc., are installing two printing machines in their Pontiac Bleachery.

Fact and Gossip

PATERSON, N. J. S. M. Schwartz & Co., Inc., recently organized with a capital of $125,000, to operate a local print and dye works, will be represented by Peter Hofstra, 152 Market St., Paterson, one of the incorporators. The other incorporators are Samuel M. Schwartz and Joseph V. Fumagalli.

MISCELLANEOUS

New Construction and Additions

ALBANY, ALA. The Alabama Power Co. is preparing to more than quadruple the power available to Albany and Decatur by the establishment of a new 110,000 volt sub-station here. The new station will have a capacity of 10,000 h.p. which will be in addition to the 3,000 h.p. that is already being brought over the transmission line from Huntsville. The company has tentatively selected a location in the vicinity of the new plant of the Connecticut Mills Co. and a spur track will be constructed immediately.

*Indicates previous mention of project.

Business Literature

CAMERON SINGLE-STAGE, DOUBLE-SUCTION, VOLUTE CENTRIFUGAL PUMPS; Ingersoll-Rand Co., 11 Broadway, New York.

This is a new and revised edition of the Cameron single-stage, double-suction, volute pump bulletin, known as No. 7059. It contains information which will interest manufacturers and engineers, showing the services rendered and giving views of numerous installations. Text and pictures explain the construction and operation. Pumps are built in three different classes, which are described in detail. They are suitable for direct connection to alternating or direct current motor, steam turbine, gasoline engine, or for belt drive. Pumps are well finished throughout. Materials used are selected because of their suitability for each particular duty.

GANSCHOW GEARS; William Ganschow Co., Chicago, Ill.

An illustrated story of the beginning and growth of William Ganschow Co. is given in this 16-page booklet, beginning with the birth of William Ganschow in 1843 and carrying the reader through the developments in the company's progress and growth up to the present time. One of the illustrations is a map of the United States which shows the locations of the company's sales offices to serve the various sections of the country. There are also numerous illustrations showing interior views of the manufacturing departments, illustrations of products, and a list of the present Ganschow executive personnel headed by William and Ernest Ganschow.

PEDESTAL BASES FOR VERTICAL MOTORS; General Electric Co., Schenectady, N. Y.

General Electric vertical motors are designed with ring bases so that, in the large majority of applications, they may be connected directly to the driven machines without mounting accessories. In some applications, however, it is difficult to attach the motor satisfactorily to the driven machine and provide convenient access to coupling. This is particularly true in the case of vertical type centrifugal pumps. For such applications, General Electric has available a line of pedestal bases that can be used with both alternating and direct current vertical motors. Specifications of these pedestal bases are given in this bulletin.

TEXTILE HINTS; The J. B. Ford Co., Wyandotte, Mich.

The purpose of this booklet is to direct attention of mill men to uses of the Wyandotte textile sodas and alkalies, and to suggest methods or formulas that will produce the most desirable results consistent with true economy. It is divided into three parts as follows: Part 1, Wool Materials, Impurities, and Processes; Part 2, Silk Materials, Properties, and Processes; and Part 3, Cotton Materials and Processes. There are also many useful hints, tables, and general calculations that will help mill men. The wide distribution and popularity of the booklet is indicated by the fact that this is the seventh edition.

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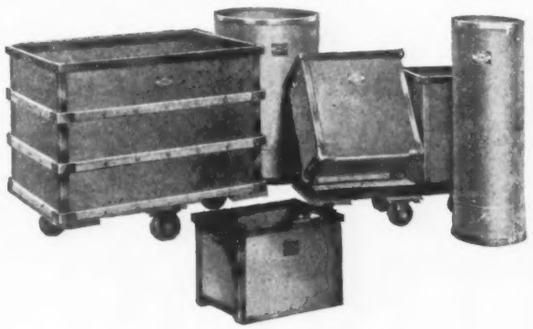

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KNIT GOODS

Hosiery Buyers Go. Leaving Fair Orders

A Good Many More Duplicates Expected Before Spring Season Is Over

Comparatively few hosiery buyers are in the market. They have gone home and it is up to the seller to go after them if he expects to sell his usual quota of merchandise. To be sure there is an air of confidence as to the future and a feeling that the situation is going to come out all right. At the moment, however, a good deal is to be desired in the matter of orders placed. The buying has been done for prompt and nearby delivery, but for anything beyond April the engagements are few and far between. This of course does not apply to fall goods, but here agents claim to be far from satisfied at the attention which has been given by the buyer to offerings. A good deal more business was anticipated on fall merchandise than has been done. The buyer intimates that he will need the goods but says there is plenty of time to place his orders. Considering the proportion of spring business that has been done, this statement may have some basis for there is still a good deal of ordering to be witnessed if the normal amount of business for spring is to be experienced.

Infants' Socks Spotty

Comparatively few duplicates have been placed on infants' socks. Mills making this type of merchandise are not all in a favorable position. A few are fairly well sold up. An instance was told the writer this week of an important plant which has sold its product through April and the agent for this mill reported that within the last two days he had turned down two substantial orders asking for earlier than April delivery but this is not the general situation. Selling agents are not willing to admit that spring business is over but acknowledge that they will have to make frequent and thorough trips to secure it and that this ordering will have to be done before the first of April in order to insure delivery on time. So far as can be seen the fancy top and plain leg stocking is in the ascendancy and sales on this class of merchandise dominate the infants' sock division.

On children's goods there is a distinct trend away from the staple ribbed article. Buyers are not taking any interest in these goods apparently and claim it is one of the things they have carried over. The story is told of a sale to a prominent house of three cases last fall. When the salesman visited them last month they still had two cases unopened. This may

(*Continued on page 467*)

Causes for Careful Buying

Variation in Prices Leads to Conservatism—Refusal by Sellers to Consider Unreasonabe Demands

THERE is a sign in a window on Broadway near the knit goods district which reads as follows: "Somebody is going to buy this (not a textile article) way below cost. We are reducing the price 10% per day." A logical deduction would be that eventually someone is going to get the article for nothing, but if we were to assay the role of prophet we would not venture any such guess. The question is whether such an advertisement has the proper sales argument behind it or whether it would tend to delay the possible buyer who is always looking for the bottom.

Has this any parallel in the underwear market? Are buyers being discouraged in the operations for another season by a lack of price certainty and are they waiting for what they believe has not been touched—the bottom? It is hard to answer this question for there are undoubtedly those in the buying fraternity who have not bought as liberally as was expected or possibly as liberally as they anticipated when they came here. In other instances reports are to the effect that greater anticipation of requirements has been realized than appeared likely at the opening of the season. In other words, it is a very spotty market as far as demand is concerned and no general statement can comprehend all the market.

Will Buyers Over-Stay Market?

While a good deal of disappointment is expressed in certain quarters on early buying or lack of buying on the part of the wholesaler enough has apparently been done by leading agents to justify them in taking a firm stand on certain demands made by the buyer. For instance, requests have been received during the week to send samples without an actual order being placed. In other words, it is a sample order with no intimation that the detailed order will be forth-coming. Earlier in the season it is possible that such an order would have been accepted although some of these orders amount to a comparatively small amount. Now that sufficient business has been taken sellers are not so keen about giving way to all the demands of the buyer and instances are reported where these sample orders are turned down unceremoniously. Sometimes the agent is willing to accept the order but upon reference to the manufacturer it is turned down and will not be considered. Those manufacturers who have taken a fair business are also refusing to consider undetailed orders. As an illustration, a large buyer who placed an order for 115 cases offered to give the seller 125 cases more, to be detailed March 15. He was politely but firmly told that this order did not amount to anything and he had better wait until he knew just exactly what he needed and then give details for it. There is sufficient excuse for taking this determined stand for the making of samples often disarranges the whole schedule of the mill and beside they cost more than the ordinary line. To disrupt an organization to get out samples for which there is no positive assurance that a bona fide order will follow is to expect that the manufacturer is going a long way to satisfy an unreasonable request.

Prices Very Low

It is being realized as the season progresses that prices on fall underwear are relatively lower than they have been in a number of years and yet the buyer is waiting for still lower figures. On 16-lb. ribbed garments the price of $7.50 brings the level down to practically pre-war prices when cotton was a good deal lower than it is today. It must also be remembered that cotton and yarn are not as cheap as they were when heavyweight prices were made and there does not seem to be any chance of a break in these raw materials. On the other hand, everything points to further advances. Some of the prices that are reported seem to authorities to spell actual loss if not financial ruin of the plant itself. For instance, a selling agent who is part owner of the mill in which the overhead is reduced to a minimum and whose yarn purchases are made both carefully and understandingly stated this week that he had a line of goods on which he was quoting $9.50 per dozen. At this figure and with the overhead as low as it could be made he said that the profit was 27c. And yet he knew of two selling agents who were offering practically the same garment with yarn bought from the same concern and with a good deal more overhead, at $8.25. "How can it be done?" he said, and there was no answer.

Reasons for Delay

Why does the buyer hesitate to take practically his season's requirement of underwear for fall? Although, as stated above, a good many bought more liberally this year than last and apparently with little dissatisfaction as to prices, yet a very fair number have gone home without placing orders. To be sure, they have taken memoranda and have said that in all probability they will buy about the same amount as last year. No sane selling agent regards this as an order nor would he be willing to send it to the mill and he is trying to figure why there is this attitude on the part of so many buyers. As above stated, doubtless the variation in prices in the market as well as the apparent weakness in certain quarters has done a good deal to disturb confidence in the prices announced at the beginning of the season. But in addition doubtless the attitude from the financial office has been a restraining influence. There is no doubt that wholesalers have had the lowest inventories experienced in years but at the same time the merchandise managers and the financial heads of distributing houses have determined to keep stocks down to an irreducible minimum and are not permitting the buyer to exercise his own judgment as to purchases. Otherwise it would seem as though the volume of trading would be a good deal larger.

Effect of Delayed Deliveries

All these remarks are made in spite of the general tone of optimism that exists. Belief is entertained that as the season goes on buying will increase and if the buyer finds difficulty in getting satisfactory deliveries when he wants them this fact is going to increase his volume of orders. No one anticipates a scarcity of merchandise but the majority of mills are refusing to carry the bag for the buyer and are not going to make goods for stock. Therefore it is not unbelievable that a scramble for merchandise will occur later in the season and those who are well taken care of through early purchases are likely to benefit and others are also likely to be discriminated against.

Bathing Suits Are Taken Sparingly

Buyers May Be Disappointed if They Delay Operations Too Long

Little interest has been exhibited by buyers who have visited the market during the last few weeks in the purchase of bathing suits. The attention of the majority has been centered on the ordering of fall lines of underwear and on sweaters. Efforts to obtain a fair representation of bathing suits have apparently been unavailing. It seems somewhat anomalous that activity should be witnessed on another season while preparations for the current selling period have not been made in any fair proportion.

Buyers May Be Disappointed

Those buyers who delay action on bathing suits for any length of time may awake to find they are not going to get what they had expected. It will not be many weeks before the ma-

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A new feature of this edition is a section devoted to manufacturers of Rayon Underwear.

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Knit Goods—Continued

jority of mills will stop production on this class of goods and turn their machinery on other lines for the fall season. When once they have transferred their machines to other types of garment they are not likely to start up again on bathing suits. Nor is it likely that mills would make goods for stock and it is certain they have no accumulations on hand.

All these conditions, present and future, do not augur well for the buyer who has determined to wait indefinitely to place his orders. He may find that when he finally makes up his mind to come into the market he will have to wait so long for deliveries that his season will have closed or that he cannot get the lines he wants for any delivery.

Of course there is complaint about prices, but agents declare that all indications point to higher prices rather than lower. This attitude would be confirmed if a sufficient amount of curtailment is witnessed. There is every appearance that the manufacturer has learned to adjust himself to the current method of operations and is not going to carry the burden for the buyer who refuses to take any risk in the purchase of his goods. Therefore the outlook is unmistakably against bargains being offered to the wholesaler who may find that current prices are the lowest he is going to witness for the season.

Hosiery Market

(*Continued from page* 465)

be an extreme case but it indicates the lack of consumer demand on this type of merchandise. The fashioned stocking, full length and fancy pattern, is in much better request.

Fiber Goods Lagging

It seems apparent that rayon stockings have not yet overcome the effect of price decline in the raw material. Notwithstanding the assurances of dealers that the fiber has been stabilized and that no further cut can be expected for some time to come, there is still a feeling of uncertainty on the part of the buyer because of the depreciation he has been obliged to write off on any merchandise he might have in stock. The falling off in export trade has affected the volume of business materially, especially demand from England. This market has been on a decline scale for some months and whether it is to show a change for the better no one is willing to prophesy.

Despite all the talk about the trend toward staples that has been going the rounds of the market for several months, the tendency seems to be in favor of a larger volume of business on fancy half hose with no evidence that the market is to show a decline. It is admitted that it is necessary to keep up-to-date with the newest styles and patterns and of course to do this means effort and expense on the part of the mill. It seems to be the only way, however, to maintain a satisfactory volume of business on fancies and those who are approximating efficiency to the greatest degree are the ones who are benefited.

Outerwear Directors Meet

Board Adopts New Constitution and Live Program

At a meeting held by the National Knitted Outerwear Association's board of directors last Thursday and Friday at the Waldorf with a full attendance, a new constitution with new membership features was adopted and became immediately effective. This document was the result of two years' work on the part of the Reorganization Committee.

In addition to an aggressive membership campaign, the board adopted the following constructive program:

1. Expansion of research work to include not only standardization of sizes, but to solve individual research problems for its members, with no limit as to the field of inquiry.

2. Complete study of the outer container situation, with a technical expert in the field making detailed reports in each member's plant with a view to saving money in the cost of packing merchandise, as well as in the cost of transportation. In this work the Outerwear Association has the active interest and cooperation of the National Retail Dry Goods Association and other distributors' organizations.

3. Pursuance of the effort to obtain an increase in the size limit of outer containers allowed for freight shipment until successfully concluded. In this work the Outerwear and Underwear Associations are joined, and again have the interest and support of the retailers' organizations.

4. Study of the entire situation connected with the question of opening dates. This study is entrusted to the Merchandising Committee with instructions to report at the annual meeting next summer.

5. Serious consideration of an aggressive program to maintain the momentum of popularity for knitted outerwear. A special committee was appointed to consider the question of conducting a real exposition on a large scale, with instructions to report recommendations at the annual meeting next summer.

6. Acceptance of invitation to hold the next annual meeting in Los Angeles contingent upon the favorable result of a canvass of the membership. Should this canvass indicate a probable good attendance, Los Angeles will entertain the next annual meeting. Otherwise, the meeting is to be held at a resort in New England.

Ellery B. Gordon, executive secretary, stated that the above vital activities are already under way and noted the very evident feeling that not only is the industry taking on new life, but the association is very definitely assuming leadership in the knitted outerwear field.

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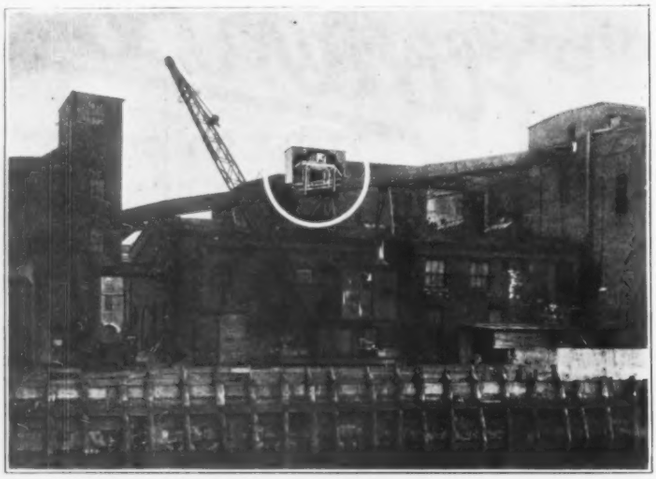
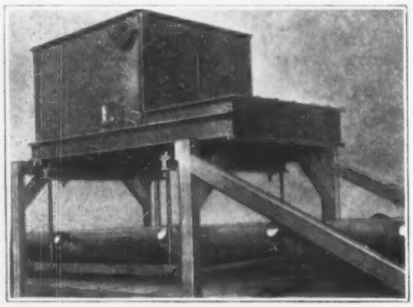


MERRICK CONVEYOR WEIGHTOMETER on a belt conveyor carrying coal to bunkers in a large New England plant.



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This scale is built for use in plants where the boilers are hand fired and where only a small amount of coal is used.

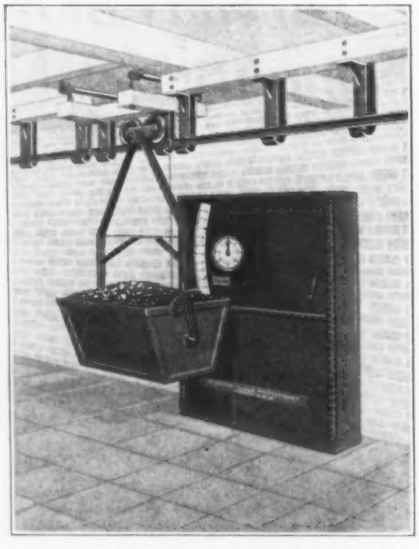

FIG. 10—Typical Installation. Weighing Buckets of Coal.

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Auburn Woolen Co.

Auburn, N. Y.

JESSE H. METCALF, *Pres.* STEPHEN O. METCALF, *Treas.*

Fine Woolens

FABRICS

Wool Goods

American Opens 1927 Fall Overcoatings

Market Feels Customary Hesitancy of Buyers—Women's Wear Retailers Lagging

The opening of overcoatings by the American Woolen Co. on Wednesday for the fall, 1927, season disclosed a complete offering of patterns and constructions which gives buyers the best opportunity to find something which appeals to them no matter what their convictions on future style requirements may be. As usual with woolens, where style changes have been made, it is difficult to make accurate comparisons with past season's prices. It is evident, however, that prices are reduced by varying percentages from a year ago.

The American's showing came after a postponement from Monday, the day originally set for the showing. The delay seems to be typical of the market, for a number of other sellers who were thought to be ready to start their woolen lines have held off on the ground of last minute changes. There are a fair number of buyers in town, but the season appears to show a repetition of the usual hesitancy.

The start of staple worsteds last week set a level which should be helpful in the further development of the spring season. Some lines are advanced over the last named spring price, while others are continued into the fall unchanged. Buyers seem anxious to see fancy worsteds, but sellers will probably do nothing on them until after the middle of the month.

The women's wear trade is dull. Absence of definite retail demand for the spring season is given as the chief deterrent at present. Super caution by the retailer with an unwillingness to take a share of the risk, is condemned as at the bottom of much of the market's difficulties.

* * *

T. Guerin & Co. Move N. Y. Office

T. Guerin & Co., Inc., have removed their New York office to 25 Madison avenue, 16th floor. The old address was 257 Fourth avenue.

* * *

New Firm of Selling Agents Formed

Chas. A. Spiller, who has been sales agent for the Elton Textile Mills, of Manayunk, Pa., since 1923, has formed a partnership with Richard H. Wheelock, under the firm name of Spiller & Wheelock. This firm will be selling agent for the Elton Mills.

Mr. Wheelock has been connected with the New York agency of the Acme Worsted Mills for 14 years.

* * *

Metcalf Opens Staples

Metcalf Bros. & Co. have opened their lines of staple worsteds for fall, 1927, at prices that are on the same basis as the level established last August for spring, 1927. Following, are the prices of important pivotal numbers with comparisons:

		Fall 1927	Spring 1927	Fall 1926
349	.....	$2.35	$2.35	$2.57½
350	.....	2.70	2.70	2.97½
366	.....	2.80	2.80	3.05
386	.....	3.10	3.10	3.35
386-16	.....	3.30	3.30	3.62½
364	.....	2.95	2.95	3.22½
666	French Back.	4.20	4.20	4.60
1232	.....	2.50	2.47½	2.67½

Cotton Goods

Cotton Goods Are Firm But Quiet

Outlook Favors Stability—Sheetings Strong—Colored Goods Are Well Sold

The cotton goods market was quieter during the week, but in all quarters there was further evidence of firmness and a well sold condition. No general belief is apparent that raw cotton will mount much further, and the probability of consequential recession is not given any weight. If the raw cotton market is the product of the mass opinion on its course, it will remain on even keel for some time to come. Mills have been large sellers of many different sorts of goods during the last few weeks and the probability of a healthy schedule of operation during ensuing months is great. No pressure to sell will be developed for many weeks under these conditions.

Print cloths have been quieter and in a few instances second hands have been making offerings but without appreciable price cuts and therefore without much effect on the market. Spot lots of 64x60s are available at 6⅞c, with a number of holders asking 7c. Most mills want 6⅞c for the second quarter of the year. Finer print cloth constructions are firm, and spots are scarce enough to prevent any chance for concessions.

Sheetings hold a strong spot situation, and buyers of 40-inch goods have found that it is difficult to locate anything under the full spot premium. For 40-inch 2.85 yard goods, 10c is the price, with contracts offered at ¼ to ½c less. Osnaburgs are being sought by the bag trade and buyers are cautious about any action that might turn the market to their disadvantage.

Colored goods are well sold. The vogue of small patterns in prints has aided the corporations in obtaining a fine business. One line of flannels was withdrawn this week. Another house reported the largest business for several seasons on printed flannels.

* * *

Cotton Goods Quotations

	Feb. 2	Jan. 26	Feb. 2, 1926
Spot cotton, N. Y....	13.65¢	13.50¢	20.70¢
Print Cloths			
27 in., 64x60, 7.60..	4¾-5⅛¢	4¾-5¢	6-6⅛¢
38½-in., 64x60, 5.35..	6¾-7¼¢	6⅞-7¼¢	8½-8⅝¢
39- in., 68x72, 4.75..	7¼¢	7¼-7⅜¢	10-10¼¢
39- in., 72x76, 4.25..	8¼-8⅞¢	8¼-8⅞¢	11⅛-11¾¢
39- in., 80x80, 4.00..	9⅛-9¼¢	9⅛-9¼¢	12¾-12½¢
Brown Sheetings			
36- in., 56x60, 4.00..	7⅞-8¢	7⅞-8¢	10-10½¢
36- in., 48x48, 3.00..	9-9⅛¢	9-9⅛¢	10⅝-11⅝¢
37- in., 48x48, 4.00..	7⅛-7¼¢	7⅛-7¼¢	9⅝¢
Pajama Checks			
36½-in., 72x80, 4.70..	7¾¢	7¾¢	10⅝-10⅝¢
36½-in., 64x60, 5.75..	6¾¢	6¾¢	8⅞-8⅝¢
Miscellaneous			
Drills, 37-in., 3 yd....	10¢	9¾¢	12-12½¢
Denims, 2.20s.....	14¢	14¢	17½¢
Tickings, 8 oz.....	17½-19¢	17½-19¢	21¾¢
Standard prints.....	8¢	8¢	9½¢
Eastern staple ginghams, 27-in.....	9¢	9¢	9¢

* * *

Cone Withdraws Minneola Flannels

The Cone Export & Commission Co. withdrew their line of Minneola flannels this week having sold up the production until October.

* * *

Amoskeag Shows New Novelty Lines

The Amoskeag Mfg. Co., Jarvis, Loomis & Dunbar, selling agents, has introduced several new novelty fabrics for spring. The distinctiveness of many of the patterns shows the effort to get away from what is being shown in the rest of the market. The goods which include tissues, lace work, twisted cords, rayons, mosaics, etamine grounds, etc., are offered to sell in the popular price range.

* * *

Fertilizer Firm Will Use Cotton Bags

New Orleans, La.—The Pick Fertilizer Service, Inc., according to W. W. Perkins, president, will from now on ship all their fertilizer in cotton bags. The firm normally uses 200,000 bags a year, and the change from jute to cotton, will mean the consumption of from 300 to 400 bales of cotton. The cotton bag used now, was tested last spring. It is an osnaburg bag, similar to the one used by the sugar interests and replaces a 10-oz jute bag formerly used.

* * *

Butterfield Appoints Agents in Latin America

Fred Butterfield & Co., Inc., cotton converters of 361-363 Broadway, New York City, announce the appointment of Casas & Co., Inc., of 350 Broadway, New York, as exclusive agents for Argentina and Colombia, with offices at Buenos Aires, Argentina, and at Barranquilla, Bogota, Cali, Medellin, and Manizales in Colombia.

They also announce the appointment as their agent for Cuba of J. M. Pelaez, of 350 Broadway, New York City, with offices at Havana, Cienfuegos, and Santiago de Cuba.

Silk Goods

Silk Mills Prepare For a Print Demand

Conservatism So Far Puts Market in Strong Position—Satins Do Well

In the opinion of many the strong demand for Canton both in the raw and thrown that has been the feature of the market during January, is in the nature of a prediction of what the buyers will want in another month or so. Not all the Cantons that have been going into work and will go into work during the coming six weeks will be wanted for plain goods. Preparations are now being made for a print season and the Cantons will be printed in a good proportion of the cases. The position of the prints just now is rather strong due to the conservative way that mills have gone ahead with their printed merchandise. No heavy stocks exist so far as is known. The better class dress houses are reported to be using them rather largely at the present and if this is the case the rank and file of the cutters will turn to them shortly.

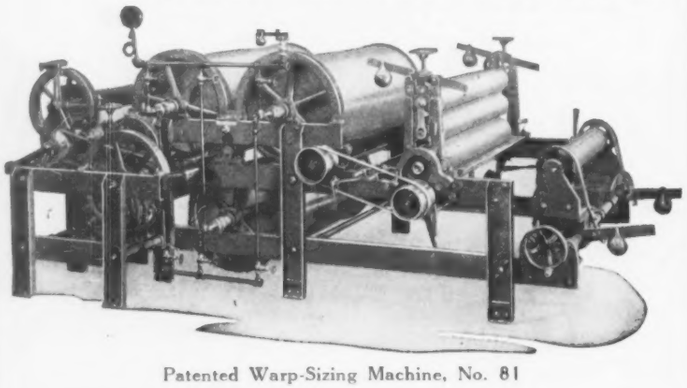
Conversation heard around the market reflects the sharply competitive conditions that exist. There is this difference, however, that whereas a couple of months ago the goods could not have been moved in volume at all, today they can be moved but only at extremely close prices. The slowly downward trend to raw silk over the last three months leaves manufacturers in the unfortunate position of having to compete with merchandise being made up on the basis of the present levels which approximate the lowest witnessed since 1924.

A number of houses handling satins speak of a rather good demand for this number, better in fact than they counted upon. Weighted merchandise in flat crepes and georgettes continues to move in volume but at prices that have caused quite a number of firms to throw up their hands and retire from the battle.

Silk Situation at a Glance

Production: Unchanged
Demand: Improving
Stocks: Ample, but not unusually heavy
Raw Silk: Prices lower; stocks unchanged
Sentiment: More confident due to slightly better business noted in last half January

THE JOHNSON WARP-SIZING MACHINE



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FINANCIAL

Southern Market Quiet

GASTONIA, N. C., Jan. 29.—The average in price of 25 common stocks of southern cotton mills closed at 109.16 for the week according to the summary of R. S. Dickson & Co. The majority of Belmont mills recently held their annual stockholders' meetings and paid cash dividends of 5%. Practically all of the mills operated successfully and earnings were good. The common stocks of these mills have been in demand during the week, and a few have advanced from $2 to $5 per share since payment of the dividends.

New England Textile Stocks

(Quotations at "Public Sale" are based upon last sales at Boston public auction and Boston Stock Exchange. Bid and Asked prices are latest quotations of leading Boston dealers.)

	Public Sale	Bid	Asked
Am. Wool. pfd.....	80	...	...
Am. Mfg. pfd.....	82¼	82	84
Amoskeag, com.....	51	...	...
Androscoggin	43½	40	45
Arlington	67¼	66	68
Bates	...	110	115
Berkshire Cot.	...	120	125
Bigelow-Htfd, com...	80	...	...
Boott	...	...	106
Edwards	43	45	...
Esmond, pfd.....	99⅜	98	...
Everett	15¼	15	16
Farr Alpaca	164⅛	160	164
Great Falls	11	10	13
Hamilton Woolen...	30	...	31
Hill	19½	19	23
Ipswich, pfd.	87½	94½	...
Ipswich, com.....	38½	43	50
Lawrence	67⅞	69	72
Ludlow Asso.	177	175	178
Lyman	112½	112	116
Massachusetts	71	72	74
Merrimack, com. ...	115	115	117
Nashua, com.	91⅞	49	51
Nashua, pfd.	169	90	92
Naumkeag	169	168	170
N. E. So. pfd.....	7	...	...
Otis Co.	19	19	21
Pacific	40¾	...	...
Pepperell	117⅛	116	117
Plymouth Cordage ..	125	125	128
Tremont & Suffolk..	23¼	24	27
York	34	30	34

Silk Stocks on N. Y. Exchange

(Week ending Jan. 31)

1927 High	1927 Low	Stock	Sales	High	Low	Last
27¼	20⅝	Belding Hemingway.....	9,300	23	20⅜	23
12⅞	10½	Century Ribbon.	1,500	12⅞	10½	12⅞
57¼	50	Julius Kayser...	10,300	57¼	52½	55½
16	14½	H. R. Mallinson	1,200	15	15	15
..	..	Van Raalte.....	.....	..	..	..

Rayon Stocks on N. Y. Curb

Stock	Sales	High	Low	Last
Courtaulds, Ltd.	200	27¾	27⅜	27¾
Industrial Rayon Corp.	1,700	6½	6⅛	6½
Snia Viscosa	600	9¾	7¾	9½
Snia Viscosa Int Certs.....	900	8¾	8	8¾
Tubize Art Silk Co.	150	150	145	145

Pepperell to Beautify Its Southern Mill Village

OPELIKA, ALA.—The Pepperell Mfg. Co. has started an interesting movement at its local mill village to beautify the property. It is termed a "beautify your own home" campaign. The company will offer cash prizes for the one making the greatest improvement on the premises on certain streets of the village, and then later a prize will be offered for the prettiest home in the entire village.

More Inventory Losses

Except for These Many Cotton Mills Would Have Made Encouraging Showings Last Year

BOSTON, Feb. 1.

RARE indeed is the cotton mill that escaped a serious inventory loss during the last six months of 1926, and equally rare is the mill whose operating profit was not wiped out by inventory shrinkage. Every week brings a new batch of financial statements of mills which closed their fiscal year December 31, and the almost uniformly discouraging statements are not of a character calculated to stimulate advances in textile shares or encourage demand for such securities. Nevertheless, the majority of those investors who are in close touch with the situation will realize that with cotton on the present abnormally low basis there is little likelihood of a repetition of the inventory losses of the last three years, and every prospect that there will be an expansion in demand for cotton textiles and resultant increased profits. They are also well aware that the majority of mill officials have not hesitated to take as large inventory losses as cost or market warranted, and that this present sacrifice should help to swell black ink figures at the close of the current fiscal year.

There has been little change in the character of demand for textile stocks, the bulk of it coming from seasoned investors and being of a discriminating character. Values are a little steadier, and such declines as take place in high grade shares are fractional and are quickly recovered. On the local exchange Amoskeag common and Pacific have been most active, the former being unchanged at 51 and the latter showing a net decline for the week of ¾ point at 40¾. American Woolen preferred is practically unchanged for the week at 80, although it sold in the interim as low as 77½. Amoskeag preferred is back to 75, and Bigelow Hartford preferred is up ¼ point to 101¼, and the common off ½ point to 80.

Pemaquid To Exchange Shares

At the annual stockholders' meeting of Pemaquid Mills, cotton goods, New Bedford, Mass., in Boston on Wednesday, the directors were authorized to exchange the preferred and common shares of the Worth Mills, Fort Worth, Texas, in which the Pemaquid holds a controlling interest, for common shares of a corporation to be known as the Worth Mills and to be organized in some other state than Texas, and were also authorized to determine the terms and conditions upon which such exchange shall be effected. This action was taken by the stockholders in response to the advice of the directors and a letter submitted by President Charles L. Harding, which, in part, is as follows:

"The company owns a large preferred and common stock interest in Worth Mills, a Texas corporation. Worth Mills has made a fair profit during the past year and its prospects for future profits are encouraging. The officers of Pemaquid Mills are satisfied, however, that the full possibilities of the mill are not being realized at the present time because the responsibility for the management of the company is divided between the New England officers and directors, representing the interests of Pemaquid Mills, and the Fort Worth officers and directors, representing Texas stockholders. Furthermore, numerous technical difficulties have developed in connection with the organization of the company under Texas laws which are proving to be a distinct hindrance and embarrassment to Worth Mills.

"A plan has been developed under which it is proposed that Pemaquid Mills shall exchange its shares, both common and preferred, for common shares in a new corporation, and the Texas stockholders shall exchange their shares, both common and preferred, for preferred shares, (excepting that a few Texas stockholders are to receive common shares in the new company in exchange for the common shares now held by them). This new company is to be organized in some State other than Texas. The plan also provides for an adjustment in common stock of preferred dividends in arrears. The result of this exchange would be to give Pemaquid Mills a very large proportion of the common stock of the new corporation.

The directors of Pemaquid Mills feel that with a firmer control upon the management of Worth Mills, that company can be operated to better advantage and they feel that the plan offers an attractive prospect of a larger share in its future earnings."

Action on Hamilton Pending

Following the deferred hearing on the offer of Marden & Murphy of Lowell, Mass., for the property of the Hamilton Mfg. Co., in the equity session of the Suffolk Superior Court, Boston, Judge Marcus Morton took the offer under advisement and will render a decision after conferring with other judges who have heard various phases of the case. During the hearing Charles F. Rowley, one of the co-receivers, appeared in favor of the offer, but stated that Reuben Dunsford, the other co-receiver, who is now in England, took the position that a larger sum could be secured at public auction. Mr. Rowley submitted the recent appraisal of Walter Guyette of Lowell putting a value of $1,599,000 on the property including machinery and buildings. Mr. Rowley stated that the Marden & Murphy offer will be only $73,000 short of meeting creditors' claims in full, and that he had claims against the Federal Government, the State and the city of Lowell which he believed should yield between $120,000 and $130,000. It was stated at the hearing by Albert S. Howard, a stockholder, that "the man who is to make a payment to bind the offer is Mr. Arthur R. Sharp, who is responsible for the present condition of the company. This proposal means that he will be released from all liability to the concern. Other stockholders would have only the privilege of coming into the company again with him. I was induced to buy Hamilton stock by his representations, and if Mr. Sharp gets back the property, that would be the crowning injustice. Also I understand the Lowell *Courier-Citizen* has made an offer of $150,000 for certain of the mill property. I believe Marden & Murphy will make $250,000 out of this transaction."

Attorney Charles H. Tyler, representing Mr. Sharp, replied: "At the time of the difficulties Mr. Sharp put all his property into the hands of Mr. Wright, my partner, with instructions to use it for the interests of creditors and stockholders. We tried to put through a reorganization, but received no appreciable amount of subscriptions. What Mr. Sharp wants to do is to see that creditors recover 100 cents on the dollar, and he wants stockholders to have the opportunity to come in just as Marden & Murphy are coming in."

Connecticut Passes Preferred

Connecticut Mills Co., operating mills on tire fabrics in Danielson, Conn., Fall River and Taunton, Mass., and at present building a new mill in Albany, Ala., to which about half of its northern machinery is to be moved, has omitted its preferred dividend of $1.75 due February 1, and President Obadiah Butler and Charles Wolcott, chairman of the Board of Directors, jointly issue the following statement: "The losses sustained by this company in connection with other textile mills during the past year have, largely owing to the unusual decline in the price of cotton, made it advisable to omit the payment of the dividend due Feb. 1, on the first preferred stock. The directors arrived at this decision with regret but feel that it is for the interest of all stockholders

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Even when operated by the lowest paid help, the Dinsmore No. 1 Hand Power Portable Railway Sewing Machine provides faultless seams.

This machine does its work anywhere, being easily moved about at will. It is an efficient practical means of joining the ends of cloth for its passage through such finishing operations as shearing, dyeing, printing, etc.

These machines will sew wet or dry, thick or thin goods, and are built in different lengths for any width of cloth.

The seam can be sewed very near the edge and is easily removable. *The edges come out all even.* Write for complete catalog.

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No. 9 Foot Power Rotary Sewing Machine

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This Portable Foot Power Sewing Machine has earned itself a reputation for economy in hundreds of mills. Gear driven, it is easy to operate and capable of attaining a high rate of speed. It is used in various parts of the mill, principally in the dyehouse, bleachery and print room, for sewing Woolen, Cotton, Burlap and other fabrics of all weights, wet or dry. Sewing Head operates without arm or connection. Write for details.

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Financial—Continued

that the assets of the corporation should be conserved.

"Definite progress has been made toward the establishment of a unit in the South. The town of Albany, Ala., has been selected as the site of the plant and satisfactory arrangements have been made for construction of a mill there for our use on our plans and specifications.

"We believe that with the southern unit in full operation the corporation will earn the dividend on its first preferred stock. It is our intention to resume dividends as soon as the financial condition and earnings of the corporation warrant."

Outlook for Pacific Dividends

Failure of Treasurer Greene to forecast definite improvement in the company's business and earnings for the current year was disappointing to stockholders, and may confirm many in the belief that there will be no resumption of dividends until a large portion of the five year 5½% note issue is reduced. There is also keen disappointment for stockholders in the failure of sales to increase in proportion to recent increases in the productive capacity of the company's equipment, particularly in the South. Pacific shrinkage in sales during 1926, however, compares rather favorably with that of most of the other large cotton and worsted plants, as does its inventory markdown. If it could be assumed that there would be no cause for drastic inventory markdowns during the next year or two, then it might be pointed out that the reduction of this item on the Pacific balance sheet to the 1923 basis would nearly offset interest and amortization of its note issue, but even with the latter items taken care of it is extremely doubtful whether underwriters of the note issue would look with favor upon resumption of dividends unless there were an exceptionally large increase in sales and in operating profit. It is to be noted in the later connection, however, that Pacific's percentage of operating cost was decreased approximately 1¼% during 1926, and that if sales had been as large as in 1925, operating profits, on 1926 operating costs, would have been about $1,500,000 larger.

The Harmony Mills, Cohoes, N. Y., show a net loss after depreciation for the fiscal year ended December 31, of $106,817, as compared with a net loss for the 1925 fiscal year of $223,503. The company showed a surplus Dec. 31 of $368,747, compared with $578,137 in 1925 and $870,859 in 1924.

The Concootook Mills Corp., hosiery manufacturers, Hillsboro, N. H., report for the fiscal year ended December 31 a net profit after charges of $12,484, as compared with $208 at the end of the previous year. Current assets aggregated $358,647 with no current liabilities outstanding. At the annual meeting H. H. Fisher, who has held the position of treasurer for many years, resigned, and was succeeded by W. B. Weissblat.

At the annual meeting of the Renfrew Mfg. Co., North Adams, Mass., held in Boston last week, a committee of six headed by President Donald M. Hill was appointed to formulate some plan to solve the mill's problem, this committee representing preferred and common stockholders and bondholders. The company showed a loss for the fiscal year ended December 31, after depreciation, dividends and all charges, of approximately $400,000, compared with a loss of $280,138 in 1925 and $438,650 in 1924.

For the six months ended December 31 the Edwards Mfg. Co., Lewiston, Me., lost $175,962 after depreciation and inventory shrinkage, the total loss for the year being $219,057. Inventory as of December 31 was $1,023,422, comparing with $1,603,464 the previous year.

For the six months ended December 31 Bates Mfg. Co., Lewiston, Me., showed a loss of approximately $200,000 after payment of dividends of $108,000 that were not earned. The loss was entirely due to inventory shrinkage. Inventories were carried on the books December 31 at $1,877,202, as compared with $2,613,200 on June 30 last. For the six months period there was a shrinkage in surplus of $306,134.

Stockholders of the Lyman Mills, Holyoke, Mass., are informed by Treasurer Lovering that the February dividend of 3% is being paid out of surplus reserve. The statement for the fiscal year ended December 31 shows a reduction in inventories from $913,300 on December 31, 1925 to $538,618. Surplus in the meantime was increased approximately $150,000 and stands at $809,547, of which $705,000 is in marketable securities.

Pacific Reports Increased Loss

Decreased sales and increased inventory markdowns and interest charges were chiefly responsible for the increased net loss, after depreciation, of Pacific Mills, for the fiscal year ended Dec. 31. The reported loss was $927,952, and compares with a loss of $520,819 for the 1925 year, and of $2,266,869 for the 1924 year. The detailed operating figures for the last two years are as follows:

	1926	1925
Net sales.....	$44,766,810	$52,740,931
Cost goods sold	41,727,181	49,831,337
Net op profit beif depr, int and invent mark down	3,039,629	2,909,594
Less:		
Plant depr.....	1,392,990	1,384,561
Interest & amortization .	1,320,754	1,079,784
Inv mark down	1,253,837	966,068
Total chgs.	3,967,581	3,430,413
Net prof for yr..	‡927,952	‡520,819
Div pd dr yr...	.....	†1,500,000
%	.....	3%

Comparative Statement of Sales

	1926	1925
Cotton yds.....	268,436,404	297,612,858
Worsteds, yds...	15,505,726	17,356,122
Yarns, lbs.....	159,438	37,185

† Dividends of 1921 and 1922 on $20,000,000—100% stock dividend paid in December, 1922. Subsequent dividends on $40,000,000 of stock.

‡ Loss.

The company's condensed balance

(*Continued on page* 501)

Factoring as applied to the textile industry, means selling the output of the mill for cash, without risk of credit losses, and greater volume of sales without increased capital investment.

Inquiries invited

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Mercerized Yarns by

DIXIE MERCERIZING CO.
IN NORTH CAROLINA

COTTON YARNS

Chattanooga Yarn Market Quiet

CHATTANOOGA, TENN.—The demand for yarn here continued steady during the week ending on Jan. 29 with some improvement in the demand for combed yarns. A leading local broker stated that the majority of orders he received during the week were for combed yarns. A local mercerizer states that his business is continuing at a satisfactory pace. The two statements indicate that business is continuing on about the same basis.

Prices of all yarns remained unchanged during the week. Thrown silk remained at $6.20 per lb. Price on 60s-2 mercerized was quoted at 79 to 81c with 30s at 58 to 60c and 80s at $1.04 to $1.07. Tens carded yarn was listed at 24½ to 25c and 20s at 27 to 27½c. In combed yarns, 18s were quoted at 36½c and 70s at 73 to 75c.

W. D. Johnson Now With Cape Fear Yarn Co.

Walter D. Johnson, formerly treasurer and manager of the Ernaldson Cotton Mill Co., St. Pauls, N. C., is now southern representative of the Cape Fear Yarn Co., Philadelphia. Mr. Johnson makes his headquarters at St. Pauls, N. C.

Why Spinners Prices Vary

Certain Producers Maintained Levels Above Market and Are Now Quoting Under Majority

THE spinner's situation and the varying prices resulting from differences in the status of spinning mills form an interesting study in human nature. They also constitute a problem that the yarn dealer is endeavoring to solve and is finding it pretty difficult to untangle. Distinct evidences of advanced prices can be found as well as a healthy statistical position with mills sold up often to April with backwardness on delivery. And yet, on the other hand, within the last two weeks under an advancing cotton market prices have been received from spinners which indicate a willingness to sell at a radical reduction from the prices which were demanded a short time ago. What is the explanation?

Reaction of Spinners

A plausible explanation may be given for this apparently opposite situation but we do not claim for it an all-embracing analysis or the yardstick that measures the entire industry. For what it is worth the following is presented. It will be remembered that before the first of the year a good deal of surprise was expressed at the very general firmness of spinners and their ability to maintain prices which many claimed were out of relation to the cotton market. It will also be remembered that at this time intimations were made that there was concerted agreement on prices and against naming any decline. It was admitted that no such unity of action could be proven, but it is certain that there were very few spinners who could be budged from their arbitrary position on prices by any mode of persuasion within the power of the dealer or of the consumer.

Since the above period mentioned a good many mills have taken business that will carry them well through the first quarter of the year. Some of this business was undoubtedly, as has been mentioned before, the result of covering on short sales and this character of business was undoubtedly done as very firm prices for the spinner realized he had the whip hand and was making the yarn dealer pay. Another comparatively small proportion of orders on spinners' books is the result of purchasing by the dealer for his own account, but from all reports a much larger proportion is due to contracts placed by the consumer. It would not seem likely that these orders were placed at spinners' figures which were above the market. In other words, the possibility of doing business in this period when buyers felt that yarn generally had not been reduced commensurately with cotton was only in individual cases where concessions could be obtained.

Reasons for Varying Status

It would seem to be a natural conclusion therefore that those spinners who did not hold to the high level of prices are the ones that did business and whose product is under order. This explains why certain spinners cannot quote for delivery before April and why in other instances there is a decided backwardness on the matter of delivery. If a very fair proportion of the spinners refused to drop their quotations as it would seem evident they did, it also explains why

(*Continued on page* 491)

Cotton Yarn Quotations

Carded—(Average Quality)

Double carded weav'g and knitt'g yarn 2c to 4c higher, according to size

Single Skeins or Tubes—(Warp Twist)

4s to 8s	—	—24½	20s	—	—28
10s	24½	—25	24s	—	—30
12s	25	—25½	26s	—	—31
14s	25½	—26	30s	—	—32
16s	26	—26½	40s	—	—43

Two-Ply Skeins and Tubes

8s-2	24	—24½	26s-2	—	—32½
10s-2	24½	—25	30s-2	—	—34
12s-2	25	—25½	36s-2	—	—41
14s-2	26	—26½	40s-2	—	—43
16s-2	27	—27½	40s-2 High breakage	—	—44
20s-2	28	—28½	50s-2	—	—50
24s	31	—31½	60s-2	—	—56

Single Warps

10s	—	—25½	24s	—	—31
12s	25½	—26	26s	—	—32½
14s	26	—26½	30s	—	—35
16s	27	—27½	40s	45	—46
20s	28	—28½			

Two-ply Warps

8s-2	—	—25	24s-2	—	—31½
10s-2	—	—26	26s-2	—	—33
12s-2	26½	—27	30s-2	34	—35
14s-2	27	—27½	40s-2 ordinary	43	—44
16s-2	—	—27½	50s-2	—	—51
20s-2	28	—29	60s-2	—	—57

8s-3 and 4-ply skeins and tubes; tinged, 20–20½c.; White, 23½–24c.

Hosiery Cones (Frame Spun)

8s	—	—24	22s	27½	—28
10s	—	—24½	22s (silver and Jaeger)	—	—30
12s	—	—25	24s	28	—28½
14s	—	—25½	26s	29	—29½
16s	—	—26	30s tying in	30	—31
18s	26½	—27	30s extra quality	33	—34
20s	—	—27	40s	42	—43

Combed Peeler—(Average Quality)

Warps, Skeins and Cones

20s-2	37	—39	50s-2	52	—54
30s-2	42	—43	60s-2	58	—62
36s-2	44	—46	70s-2	68	—73
40s-2	46	—48	80s-2	80	—83

Singles

12s	—	—34½	30s	43	—44
14s	—	—35	38s	45	—46
16s	—	—35½	40s	48	—49
18s	—	—36	50s	52	—54
20s	—	—37	60s	60	—63
24s	—	—40	70s	72	—75
28s	—	—42	80s	82	—85

Mercerized Cones—(Combed, Ungassed)

26s-2	54	—56	80s-2	1 03	—1 06
30s-2	56	—61	**Singles**		
36s-2	60	—62	30s	—	—82
40s-2	62	—64	40s	—	—85
45s-2	67	—69	50s	—	—90
50s-2	69	—72	60s	—	—1 00
60s-2	78	—81	70s	—	—1 12
70s-2	91	—94	80s	—	—1 50

Peeler—(Super Quality)

Single Cones

	Carded		Combed		Carded		Combed	
10s	29	—30	37	—39	26s	34 —35	44	—46
14s	30	—31	38	—40	30s	36 —38	47	—50
16s	30½	—31½	39	—41	36s	41 —43	50	—52
18s	31	—32	40	—42	40s	45 —47	53	—55
20s	31½	—32½	41	—43	50s	— —	58	—60
24s	33	—34	43	—45	60s	— —	68	—70

Combed Cones Warps and Tubes

20s-2	40	—42	40s-2	50	—55
24s-2	42	—44	50s-2	57	—62
28s-2	44	—46	60s-2	65	—70
30s-2	45	—48	70s-2	75	—80
36s-2	48	—50	80s-2	90	—95

Combed Reverse Twist Thread Yarns—Skeins, Tubes or Cones 2, 3, and 4-ply

	Peeler			Sakelaridies	
	Average		Best	Average	Best
24s	47	—49	54—	69	74 —
30s	50	—52	57—	72	77 —
36s	53	—54	58—59	74	79 —
40s	—	—58	62—63	78	85 —
45s	—	—63	67—	83	90 —
50s	—	—68	72—	88	95 —
60s	—	—78	82—	1 00	1 05—

Quotations are average prices of the counts and qualities indicated at the close of business Feb. 2. They do not cover lower or higher qualities unless specifically noted. For New York spot cotton prices, see page 483. For staple cotton prices, see page 481.

COTTON PRODUCTS COMPANY

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Cotton Yarns—Continued

Did Spinners Sell Too Soon?

High Grade Underwear Yarns Quoted Four Cents Higher than a Month Ago

PHILADELPHIA.

ALTHOUGH an active interest from weavers developed during the latter half of January continuing until the present, the feature of the market during the last month has been the volume of knitting yarns sold and particularly those qualities taken by up-State knitters. As an example of the change that has taken place it will be recalled buying in large quantities by up-State underwear manufacturers started at a 31c or 31½c basis for 30s of extra-quality. This week two of the important spinners of this grade yarn quote this count at 35c to 36c and they have sufficient confidence in the situation this year to refuse to sell at any lower level. Those spinners who have been willing to sell this count from 31½c up to 33c during recent weeks now are fairly well sold ahead for several months and many are unable to make deliveries until the summer months.

The average price of business on their books will be in the neighborhood of 32c to 32½c and several of them are already asking the question whether they made an error in booking such large quantities as they have within the last month at such prices. Those spinners who from week to week refused to solicit business at prices manufacturers were willing to pay are now in position to supply a suitable yarn and to make deliveries at an earlier date than those who have taken bulk of the business to date and at the same time to secure anywhere from 3 to 4c a pound more for the same yarn which is the difference based upon quotations named on this high grade underwear yarn this week.

In addition to this there are reports up-State knitters have not covered their requirements for light-weights by a considerable margin and that there still remains a large volume of this business yet to be placed. Under these circumstances those spinners who have their production for spring months open and are in an attractive position not only to secure bulk of this new business but to secure prices that are considerably above the prices at which their competitors took this early underwear contracting.

Orders Yet to Be Covered

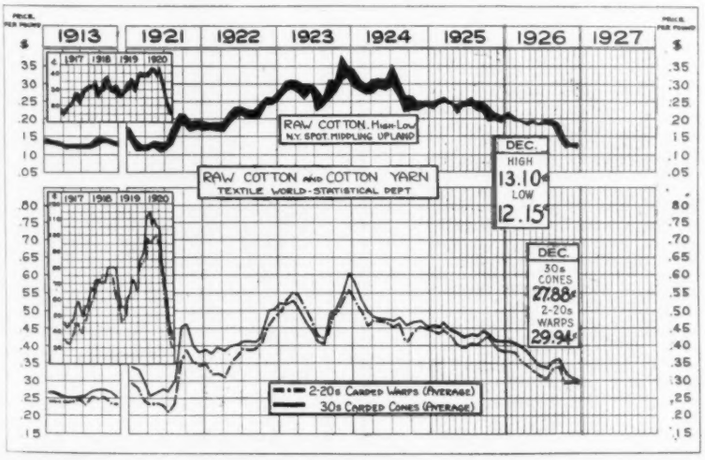
There have been several large inquiries from this trade in the market recently and according to reports from manufacturers they are now securing a good volume of new business in light-weight underwear which will make it imperative for them to buy, larger quantities than already contracted for, both for light-weights and also for medium-weights. Another trend which seems to favor those spinners who have not taken a large volume of this business to date is the fact a number of underwear manufacturers have been experiencing some difficulty in bleaching their garments made from this yarn, the garments not coming up a bright, clear white. Blame for this is placed upon the yarn by manufacturers and this could possbly react in favor of the other spinners even though later developments should indicate that the fault was not really in the yarn itself.

Spot Heavies Recede

Burlap Market Adjusts Prices That Were Out of Line

There has been further recession in the spot price of heavy weight burlap. The change is something which has been expected for some time because of the fact that spot heavies bore an unnatural relation to lights and to futures of heavies themselves. It was simply a matter of a spot pinch which has gradually been alleviated.

Recent quotations place 40-in. 10½s on the spot at 8.95c. Because of the greater scarcity of 10s they are bringing about the same figure as the heavier construction. For arrival in a month, a more normal relation exists, and the quotations are 8.70c and 8.60c, respectively. Spot 8-ounce goods are unchanged without much activity, the price being 6.50c for nearby and distant goods.



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66-72 Leonard St. NEW YORK

Cotton Yarns—Continued

Improved Inquiry

Little Appreciation of Relative Cheapness of Combed Yarns

BOSTON.—Inquiry and interest in the cotton yarn market have increased this week, but they have been confined largely to getting an up-to-date line on prices and the attitude of sellers and have resulted in no marked expansion of sales, because, in most instances they have found prices firm or advancing. This is equally true of both carded and combed yarns of high and medium grades, although on low-grade yarns there is naturally a trading basis if buyers are not too particular about cleanliness and evenness.

Combed Yarns Attract Interest

Combed and high-grade carded hosiery yarns have been in better demand, but it is difficult to estimate to what extent this is due to threatened closing of the Manomet Mill, New Bedford, Mass., or to a permanent increase in the use of such yarns. Most spinners of such yarns long ago restricted production to the comparatively small requirements of regular customers, and switched the balance of their spindles to more salable and profitable specialties with the result that there are no stock accumulations of consequence. A sudden spurt in demand for high-grade combed hosiery yarns is improbable, but should it develop buyers might find it difficult to obtain prompt deliveries, and would certainly be up against advancing prices.

The Cheapest Yarns

Spinners of combed and fine-count carded yarns of average to high grade still find it difficult to convince buyers of the relatively higher present cost of the cotton content of such yarns than of ordinary carded and combed yarns in which low-grade cottons may be used, and of the relative cheapness of the former at prices convenient. A comparison of present cotton prices with those ruling last October, however, will show that while futures have advanced only 150 to 175 points there has been an additional advance in premiums on middling and higher grades of extra staples of firm 300 to 400 points, while that on Government 1 to 1⅛ inch cottons of strict low middling and higher grade has been approximately as great.

It is true that with demand for high grade yarns slack the price pace is being set by spinners who still own cotton bought at low prices last fall, but users will do well to understand that comparatively few spinners covered at those prices, and also that stocks of those who did are dwindling.

Points to Quality Demand

Of course, if there is to be a subnormal demand for quality goods and yarns there is nothing in the cotton and yarn situation for producers of such goods to worry about, or to take advantage of, but if relatively cheap cotton does not stimulate an increased demand for quality cotton products it will be about the first time on record that this will have happened. If, however, demand runs true to precedent, then many yarn users who are hesitating to anticipate their needs will have cause to wish that they had made a careful survey of the market situation, and had accurate information upon which to base their operations and to encourage them to take advantage of current low prices of combed yarns of average to high grade.

Comber Promises Well

Output May Run Behind Consumption—Manchester

BOSTON.—The cotton waste market is slowly emerging from the distressing situation which enveloped good and poor wastes alike last year making 1926 the most distressing year encountered by the organized waste trade. There seems to be considerable confidence shown in the near future of the best materials. The outlook is for no very large output of comber this year and while cotton consumption is likely to run well on the average of last year it is not impossible that comber output will move in the opposite direction. The supply of threads will of course be normal in relation to the amount of spinning done and the output is therefore likely to be in strict accordance with the production of yarns of all kinds.

It is no longer so distinctly a buyers' market. Holders of good spinnable materials now have something to say on the question of price. For year to date the picker and fly problem has not been solved and the situation does not seem very promising. This was one of the big troubles of the market all through 1926 and may be repeated with variations throughout 1927. So long as the mills consume large quantities of cotton, 600,000 bales or more monthly, just so long will there be a regular and constant output of these materials discarded in the manufacturing processes. In the case of comber the situation is entirely different, the operation of combing representing the carrying of the prepared cotton through another stage for production of the higher grades of yarns.

In the English cotton waste market there is a better feeling. A good many contracts have been entered into covering delivery a long way ahead. It is believed that the trend of prices is likely to be upward rather than downward. More confidence has been seen than for some time past. Buyers of most classes of wastes are still moving cautiously however though there is a distinct tendency toward larger business. So far as exports are concerned there is no sign of activity.

Current Quotations

Nominal

Peeler comber	10½—11½c.
Peeler strips	9½—10c.
Egyptian comber	9 — 9½c.
Choice willowed fly	3½— 4c.
Choice willowed picker	3 — 3½c.
Sak. strips	13 —14c.
Linters (mill run)	3 — 3½c.
Spoolers (single)	8 — 9c.
Fine White cop	8½— 9c.

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COTTON

Cotton Steady At Slight Reaction

Some Selling of Futures on Expectation of Lull in Demand This Month

THE cotton market appears to anticipate a lull in demand during February. The theory behind this expectation is that buyers of both goods and spot cotton probably made sufficient progress in securing requirements to permit them to wait for a nearer view of the coming acreage before buying again on any large scale. Spot sales during January were fully 50% in excess of the business for the same month last year, so far as indicated by the business officially reported, while February generally is a quiet month, and on the whole, the theory of a lull does not appear unreasonable. Those who hold it, naturally, are inclined to expect reactions, and during the past fortnight, perhaps, there has been more or less realizing or liquidation on this view of the outlook. With the speculative long interest in futures now considerably reduced, however, the market has become quiet enough to suggest that there is more disposition to wait for a decline to buy on, than to sell in anticipation of lower prices.

Of course, a lull in demand does not necessarily mean that cotton will weigh on the market. The South seemed willing to supply the requirements of buyers during January at advancing prices. It by no means follows, however, that they will force cotton for sale on declining markets, and up to the time of the present writing no selling pressure had developed in the belt. Sales as officially reported in the spot markets showed a falling off at the beginning of the month, but a continued good demand was reported for low grades in the interior and the basis was said to be generally steady and unchanged. The indications are that both foreign and domestic spinners have turned increasingly to the low grades which probably show an attractive spinning value to those who can use them.

Nothing more conclusive is heard with reference to the new crop outlook. Reports to the South-wide Cotton Conference Committee point to a reduction of from 25 to 35% in the principal States, except for Texas, from which returns so far are too incomplete to form the basis for a forecast. Traders, locally, however, are not much inclined to accept these figures, believing that if new crop months hold above 14c, there will be little reduction in the Southwest, and it is doubtful, perhaps, whether the market as a whole is looking for curtailment of more than 10 or 15% on the average. Weather conditions this winter are supposed to have been favorable so far as preliminary soil condition is concerned, and there are some who think that temperatures have been low enough to reduce the number of boll weevil in hibernation.

The following table shows Wednesday's closing quotations in the leading spot markets of the country, with the usual comparisons:

Market	Jan. 26	Feb. 1	Change	Lst. Yr	Sales
Galveston ..	13.10	13.25	+15	20.60	4,790
New Orleans	13.20	13.34	+14	20.12	13,794
Mobile	12.50	12.60	+10	19.55	440
Savannah ..	12.85	13.04	+19	19.70	257
Norfolk	13.06	13.19	+13	20.19	3,384
New York ..	13.50	13.65	+15	20.70	8,110
Augusta	12.81	12.94	+13	19.75	1,240
Memphis ...	12.75	12.75	——	20.00	25,175
St Louis ...	12.25	——	——	20.00	——
Houston	13.05	13.20	+15	20.20	15,833
Dallas	12.20	12.40	+20	19.80	32,585

The following differences on the off middlings are given as compiled from the reports received by the New York Cotton Exchange. The cotton grades marked ** are not delivered on contract.

	Dallas	Mem-phis	Mont-gomery	Au-gusta	Aver-age
WHITE GRADES					
M. F	1.25†	1.25†	1.05†	.83†	1.14†
S. G. M	1.00†	1.00†	.90†	.68†	.90†
G. M	.75†	.75†	.75†	.53†	.66†
S. M	.50†	.50†	.50†	.38†	.44†
S. L. M	1.25*	1.50*	1.25*	1.25*	.96*
L. M	3.25*	3.50*	3.50*	3.00*	2.38*
S. G. O.**	5.25*	6.00*	5.50*	4.50*	3.55*
G. O	6.50*	7.50*	7.00*	6.00*	4.93*
YELLOW TINGED					
G. M	.75*	1.00*	.50*	.50*	.71*
S. M	1.00*	1.50*	1.00*	1.00*	1.16*
M.**	2.50*	3.00*	2.50*	2.50*	2.63*
S. L. M.**	4.00*	4.50*	4.00*	4.00*	3.75*
L. M.**	6.00*	6.50*	5.50*	5.50*	5.22*
YELLOW STAINED					
G. M	2.25*	3.00*	2.00*	2.00*	2.25*
S. M.**	3.75*	3.50*	3.50*	2.50*	2.78*
M.**	4.00*	4.00*	3.25*	3.25*	3.52*
BLUE STAINED					
G. M.*	2.50*	3.00*	2.00*	2.00*	2.18*
S. M.**	3.00*	3.50*	3.75*	3.75*	2.88*
M.**	4.00*	4.00*	3.75*	3.75*	3.75*

*Off middling.

COTTON STATISTICAL DATA
(Fluctuations of Futures)

	Closed Jan. 27	For Week High	For Week Low	Closed Feb. 1	Net Chge.
February	13.08	13.30	13.08	13.23	+.15
March	13.18	13.42	13.17	13.33	+.15
April	13.28	13.50	13.28	13.43	+.15
May	13.39	13.63	13.37	13.54	+.15
June	13.49	13.70	13.49	13.65	+.16
July	13.59	13.85	13.56	13.76	+.17
August	13.67	13.90	13.67	13.84	+.17
September	13.75	14.00	13.85	13.93	+.18
October	13.79	14.08	13.79	13.97	+.18
November	13.88	14.12	13.88	14.05	+.17
December	13.97	14.28	13.93	14.13	+.16
January	.....	14.20	14.19	.....	.....

SPOT FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	L'pool
Friday, Jan. 28	13.70c	13.40c	7.26d
Saturday, Jan. 29	13.65c	13.32c	7.39d
Monday, Jan. 31	13.55c	13.65c	7.37d
Tuesday, Feb. 1	13.65c	13.34c	7.31d
Wednesday, Feb. 2	13.70c	13.34c	7.35d

Spot Fluctuations and Stocks

	Prices Feb 1	STOCKS This week	STOCKS Last year
New Orleans	13.34	634,789	427,062
Mobile	12.60	51,244	24,866
Charleston	13.00	70,335	52,992
Savannah	13.04	82,939	80,790
Galveston	13.25	682,405	612,375
Wilmington	13.00	17,130	35,608
Norfolk	13.19	124,557	140,796
Augusta	12.94	111,083	104,304
Memphis	12.75	304,361	285,778
St. Louis	12.25	8,059	15,746
Dallas	12.40	.....	.....
Philadelphia	13.90	5,051	7,232
Houston	13.20	994,250	729,601
Boston	13.55	1,707	2,563
New York	13.65	162,117	65,126
Little Rock	12.85	.....	62,781
Baltimore	13.40	1,515	1,329

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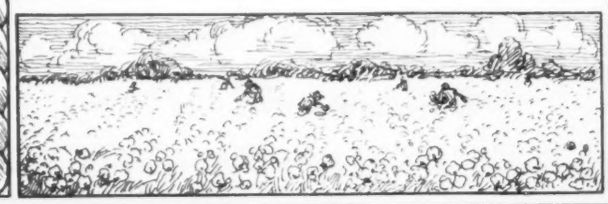

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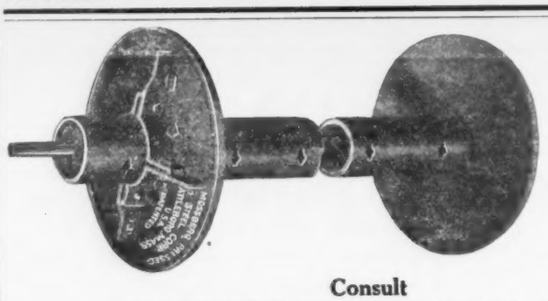

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FOR ALL CLASSES OF WEAVING

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CHARLOTTE, NORTH CAROLINA

Cotton—Continued

Cotton Demand Continues

Fair Call for All Varieties on Memphis Market

MEMPHIS, TENN. JAN. 31.—While cotton sales in this market did not reach the previous week's impressive totals, demand seems still far from satisfied. While some attribute the smaller sales to the passing of January it was nevertheless true that there was not one day during the week suitable for classing. Business was restricted also by scarcity of offerings of cotton most in demand. While there is fair demand for all kinds of cotton, except the nondescripts, it is best for the bright low grades, of fair to good staple, on which interest has centered for several weeks. There is no distinct holding tendency on the part of owners of these bright low grades but the impression that they may become scarce is gaining and there is more disposition to ask a shade above the market than to make concessions. It was quite generally predicted that a lull would follow the filling up of January commitments but shippers are booking enough new orders for immediate and nearby delivery or have decided not to delay further their commitments for the more distant months; probably both. There appears to be no buying against sales to be made in the future.

Daily receipts are again falling off in comparison with last year, due no doubt to unfavorable weather which is interfering with harvesting and with transportation. Receipts will probably increase with a return of clear weather as they did during the first two weeks of January. Recent receipts are trashy and carry heavy color. Ordinary is bringing about 8c, but some below class has sold as low as 6½c, but is not much in demand at any price. Low middling leaf, middling color, 1-in. sold at 12½c. Other sales were made at the following prices: Strict middling 1 1/16 to 1⅛ in. at 16c, middling 1⅛ in. at 15c, strict middling 1 1/16 in. at 15c, good ordinary, blue and trashy, 1⅛ in. at 8½c, strict good ordinary, blue, 1 to 1 1/16 in. at 9c, strict low middling 1 in. at 14c, low middling 1 in. at 11c, strict low middling, tinged, ⅞ to 1 in. at 10½c, and ordinary to good ordinary ⅞ to 1 in. at 8½c.

Staple Premiums Strong

Improved Demand on Moderate Declines in Futures

BOSTON, Feb. 1.—The moderate increase in demand for premium and extra staple cottons that has been experienced since the middle of last week apparently was due more to the fact that certain spinners have been scared by the recent advance in futures than by any actual improvement in demand for yarns or cloths requiring such cottons; in other cases it has been due to the fact that buyers had deferred covering as long as possible and were obliged to have a little cotton. Demand has been quite varied as to lengths and grades and is of moderate volume both individually and in the aggregate. Middling to low middling grades are the firmest.

Egyptians continue relatively much firmer than similar lengths and grades of domestic extra staples, and without stimulating any considerable substitution of the former for the latter. Flat prices of Egyptians are 1 to 3c cheaper than domestic cottons for which they would be substituted, and on a net basis there is a further margin in their favor of at least 1½c, even allowing for a slightly greater wastage in processing. English spinners are accustomed to switch from one class of cottons to the other whenever there is a price advantage, but most domestic spinners seem to regard changing from domestic to Egyptian cottons as they would changing from cotton to wool, or to some more unusual fiber. On the Alexandria exchange new crop futures advanced about as much as old crop futures declined; October Uppers are up 14 points as compared with a decline of 23 points in February; November Sak. is up 4 points as compared with a decline of 9 points in March. October Uppers at $18.84 are selling 165 points over the February option, and November Sak. at $26.54 is 129 points over the March option.

Current Quotations

Average prices for Feb.-Mar. shipment of middling and strict middling hard western cotton (Government lengths) are as follows:

	Middling	St. Middling
1 1/16 in.	17 to18c.	18 to19c.
1 1/16 in. to ⅛ in.	17½to18½c.	18½to19½c.
1 ⅛ in.	18 to19c.	19 to20c.
1 3/16 in.	20 to21c.	21 to22c.
1 ¼ in.	24 to25c.	26 to28c.

Basis on N. Y. March

John Malloch & Co., Boston, quote Egyptian cotton, c. i. f. Boston for Feb.-Mar. shipment as follows: Medium Sakellarides 26½c, off ½c. Medium Uppers, 19c, off ½c from Jan. 26. They report closing prices Feb. 1 on the Alexandria exchange as follows: Feb. Uppers $17.19, off 23c. Mar. Sak. $25.23, off 9c from Jan. 26.

Market Statistics

Basis Middling

	Saturday, Jan. 29	Saturday, Jan. 22
10 markets average	12.86	12.89
Memphis	12.75	12.75

Premium Staples

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices steady
15-in.	16½@17c
1 3/16-in.	19 @19½c
1-in., nominal	24 @25c

Current Sales

	For week	Prev. week	Week before
Memphis total	29,800	36,900	36,275
7 o. b. included	21,450	25,400	25,625
10 markets	112,747	155,163	152,909

Memphis Receipts, Shipments, Etc.

	For week	Last year	Year before
Net receipts	15,927	16,637	8,033
Gross receipts	55,009	43,252	33,099
Total since Aug. 1, net	606,690	587,096	361,826
Shipments	62,392	43,376	37,302
Total since Aug. 1	1,315,583	1,073,590	870,057
Total stock	313,762	282,787	111,286
Decrease for week	7,353	124	4,203
Unsold stock in hands of Memphis factors	134,500	118,000	.....

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Trade both in Grey and Mixtures

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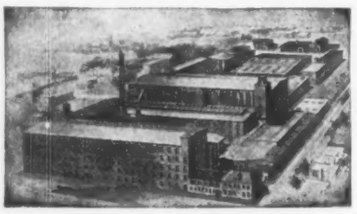

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WORSTED YARNS

Deliveries On Tops Holding Up Well

Goods Opening To Date of Little Market Influence—Noils Inactive But Stable

BOSTON.—The goods opening to date has not affected the top market either one way or another. New business seems to have come to a temporary halt. Tops are going out as fast as produced, delivery instructions continuing very good. There has during the week been rather small business placed in all grades from fine down to 44s at unchanged prices. Topmakers look for steady trade from now on believing as they do that "Worsteds are coming into their own." Some specialty business is being done in fine and super-fine Australian tops, 70s around $1.95 and 80s around $2.25. The Bradford market is very firm with 60s and 64s registering an advance of 1 penny per pound.

The production of fine noils in our domestic mills is on the increase and likely to expand still further on placing of business for worsted fabrics. The mill demand for noils is not good at this time. Consumers are not willing to pay more than 80c for the best domestic noils. Dealers are not pressing materials for sale but are rather trying to increase their stocks if it can be done at lower prices. Noils during the last two years have had a very marked decline falling from $1.25 for fine noils in January 1925 to 80c at the present time. Quarter-blood noils selling at 85c January 1925 are now down to 53c. On this low level the market is quite stable and business that will come in from the goods opening is likely to be transacted somewhere around current values. Trade in noils in the Bradford market is picking up a little. Some houses are buying quietly certain grades of noils and wastes for consignment to the United States. Fine noils are accumulating.

Top and Noil Quotations

Tops—Boston		Nominal
Fine	(64–66s)	$1.40–$1.42
Super 64s Aus.		1.60– 1.65
Half-blood	(60–62s)	1.27– 1.28
High ⅜ blood	(58s)	1.15– 1.17
Aver. ⅜ blood	(56s)	1.08– 1.10
Low ⅜ blood	(52–56s)	1.02– 1.03
High ¼ blood	(50s)	.95– .97
46s		.87– .88
44s		.80– .82
40s		.77– .78
36s		.80– .81
Tops—Bradford		
Fine	(70s)	51d
Fine	(64s)	47d
Half-blood	(60s)	43d
Half-blood, low	(58s)	40½d
Three-eighths blood	(56s)	33d
Quarter-blood	(50s)	26d
Cross-bred	(46s)	22d
Noils—Boston		
Fine		$.78– $.80
Half-blood		.70– .73
High ⅜ blood		.63– .65
Aver. ⅜ blood		.60– .63
Low ⅜ blood		.57– .58
High ¼ blood		.53– .55
46s		.50– .51
44s		.48– .50
40s		.45– .47

Will Yarn Prices Advance?

Manufacturers See No Material Change in Near Future—Firmer Wool Markets a Factor

PHILADELPHIA.

IS it within the bounds of probability to predict an advance in prices of worsted yarns above the current level, which it may be recalled has not changed materially for several months, unless to become slightly easier during the latter months of 1926? The answer to this question at the present time will be practically unanimous on the negative side. Few if any manufacturers express apprehension in regard to this contingency and in fact they are confident this will not take place. To substantiate this viewpoint it is noticeable not a few spinners are predicting that advances in yarn prices will not soon occur. Current conditions and those noted during recent months have been such as to gradually saturate the trade with this idea.

For six months or more manufacturers have been able at all times to obtain all the yarn they needed and when they needed it at prices that practically all were ready to admit could not possibly leave much of a margin for the spinner. Such a situation when continued over any period of time would naturally result in this viewpoint being held by buyers of worsted yarns, a strong feeling that no matter what may occur they will be able to buy yarns at the old price level. Spinners are the first to admit the prevalence of this viewpoint among their customers and the strong resistance they meet when advances in prices are attempted.

Advance Temporary

It will be recalled spinners endeavored to raise weaving yarn prices early last fall when a strengthening of wool values occurred and a majority of spinners raised quotations five or more cents. This move, which under ordinary circumstances would have been an entirely justifiable one for spinners, failed because a sufficient number continued actively to solicit business at the old price level and this made it impossible for the ones raising their prices to secure any business at the new level. Result was that within a short time those spinners who had raised prices then retreated, lowering prices to the former level and in addition lost a considerable volume of business and good will by this attempt which their own customers agreed would have been an equitable advance.

Such occurrences naturally have by this time resulted in a fairly general belief that nothing can occur, within a reasonable time at least, to cause worsted yarns to advance and after considering all the facts it is more reasonable to predict this than the reverse. When spinners are unable to raise prices because of an advance in their raw material, continuing with the same overhead costs and when demand for their product has been fair to good, it may be assumed something is basically wrong.

Higher Prices Possible

Notwithstanding this, advances in yarns are more likely this year than last. At least the trade now has reached the conservative conclusion that while no advances may take place it is almost a certainty yarns are as low as possible so long as wool prices here and abroad remain at the present level. All in the trade are agreed spinners' margins are as small as can be expected. Any further decrease in these would be an impossibility; a condition brought about by lack of sufficient business to keep spinners fully engaged or to keep them sold ahead, due to lack of forward contracting, and lack of cooperation among spinners. Under these conditions there will be no material change this year unless a decided change toward the Wool Council or some other cooperative movement is developed.

Indications during recent months are such that certain large factors in the trade do not believe they as a group are ready for a forward movement such as this, and they therefore do not look for any decided change in the yarn situation due to cooperative effort of the entire trade. In contrast to this there is a feeling the present year will witness just as important changes as this might have accomplished. The possibility of yarn spinners merging into larger combinations may be the factor to accomplish practically the same results and there are predictions made this year will see several consolidations such as occurred last July in Philadelphia, when two smaller concerns were merged with S. B. & B. W. Fleisher, Inc.

Will Market Change?

After considering all of these possibilities it is reasonable to assume that a greater step toward correcting ills of spinners may be affected this year, and this together with a continuance of a fair demand for worsted yarns and goods, with a firmer tendency in the raw material markets here and abroad may lead to what has come to be regarded as an impossiblity—an advance in worsted yarn quotations. Many believe the trend in this direction is more pronounced than at any time during the last three years. Whether it will actually develop depends to a large extent upon spinners themselves. Should any one of these factors develop favorably for spinners their customers could within a short time be confronted with different market conditions, less in buyers' favor, than has been true for a number of years.

Trading at present is largely centered in sales to mens' wear manufacturers, many of whom have bought heavy-weight yarns in fair volume, placing contracts, in many instances, covering their requirements for two or more months ahead. While the counts most actively specified are 2-30s and 2-32s in 60 to 64s grade, it has been noticeable a larger inquiry for these counts in the gray has been received this season.

WORSTED YARN QUOTATIONS

(Corrected to Close of Business Wednesday)

Bradford System	
2-12s, low com. (36s)	1.05–1.10
2-16s, low com. (36–40s)	1.10–1.15
2-20s to 2-24s, low ¼ (44s)	1.10–1.15
2-20s to 2-26s, ¼ bld. (46–48s)	1.20–1.26
2-26s to 2-30s, ¼ bld. (48s)	1.30–1.35
2-30s to 2-32s, ¼ bld. S. A. (46s)	1.35–1.37½
2-32s, ¼ bld. (48–50s)	1.37½–1.40
2-20s, ⅜ bld. (56s)	1.40–1.45
2-26s, ⅜ bld. (56s)	1.45–1.50
2-36s, ⅜ bld. (56s)	1.55–1.60
2-32s, ½ bld. (60s)	1.75–1.80
2-36s, ½ bld. (60s)	1.80–1.85
2-40s, ½ bld. (60–64s)	1.85–1.90
2-50s, high ½ bld. (64s)	1.95–2.00
2-50s, fine, (66–70s)	2.05–2.10
2-60s, fine, (70s)	2.65–2.70

French System	
20s, high ¼ bld. (50s)	1.45–1.50
20s, ⅜ bld. (56s)	1.45–1.50
30s, ⅜ bld. (56s)	1.55–1.60
30s, ½ bld. (60s)	1.70–1.75
40s, ½ bld. (60–64s)	1.85–1.90
50s, (66–70s)	2.10–2.15
60s, (70s)	2.70–2.75
Knitting Yarns in Oil (Bradford)	
2-20s low ¼ bld. (44s)	1.10–1.15
2-18s to 2-20s ¼ bld. (50s)	1.25
2-26s, ¼ bld. (50s)	1.31
2-30s, ¼ bld. (50s)	1.35
2-20s, ⅜ bld. (56s)	1.40–1.45
2-20s, ½ bld. (60s)	1.70–1.75
French Spun Merino White	
30s, 50–50	1.30–1.37
30s, 60–40	1.42–1.45
30s, 70–30	1.54–1.59
30s, 80–20	1.65–1.70

Difficult Yarn Market

Yarns Slow To Rise—Some Specialty White Business

BOSTON.—The worsted yarn market is a little more active and values are much firmer. Yarns have had their long-continued decline and are now showing a slightly upward tendency. Spinners are expecting to receive considerable business, perhaps not all at once, probably not, but

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Merrow Shell Machine
Merrow Edge Machine

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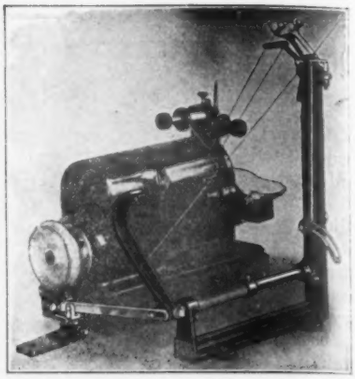

M & B Stop Motion attached to Merrow Shell Machine

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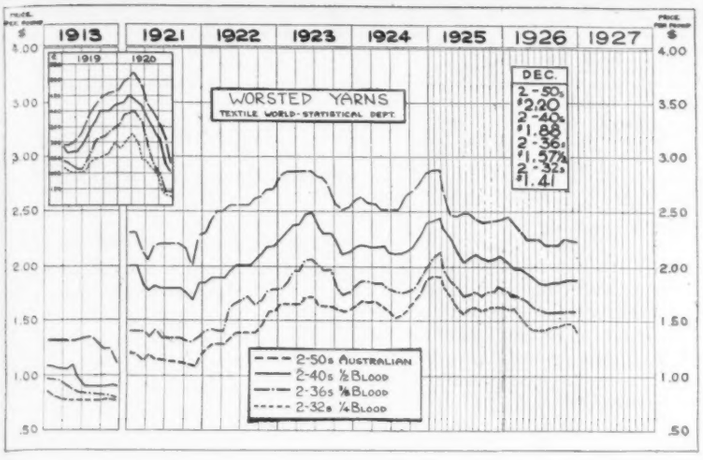
Worsted Yarns—Continued



steady and continuous. Worsted manufacturing for the first time in three or four years is forging ahead of woolens and this is a most encouraging event to spinners of worsted yarns who had a bad year of it in 1926. Wools are firm, tops are firm and fabrics are firm. Worsted yarns on the other hand are rather out of a line on the low side. Whether spinners will be able to get better prices or not is still uncertain.

Higher prices for yarns can come about either by tops declining or a sufficiently large demand for fabrics as to lead manufacturers to pay a little better price for the yarns they use. A standard yarn like 2-36s, made from 56s, can hardly command $1.50 in the market at this time and this price represents an actual loss in production. A rather unusual specialty business is developing in very fine yarns, French spun, running up to 80s and 90s for the production of very light high-priced hosiery to be worn during the winter time underneath the silk hosiery in common wear.

In the Bradford market spinners are encountering more inquiries but few materialize into good business. Spinners cannot make further concessions in face of the strong wool situation which is slowly lifting merino tops. Raw material prices are being forced up by foreign competition which situation is decidedly disadvantageous to British combers and spinners. Any material increase in wool values will, it is said, stifle demand for cloth and yarns.

BRADFORD YARN PRICES

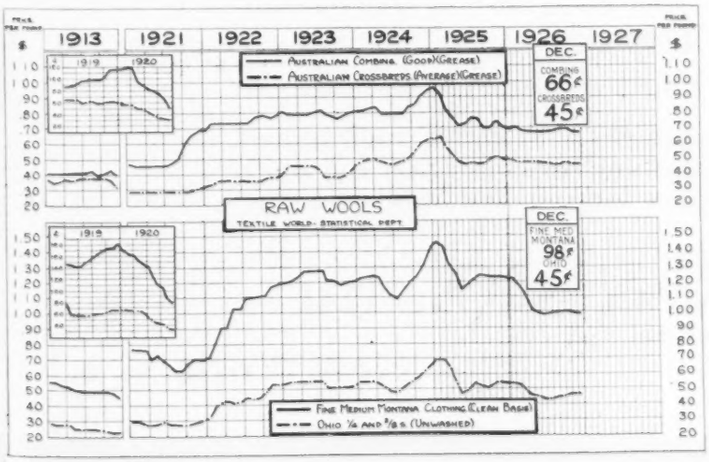
	s	d
2–16s, 36s	2	1
2–24s, 44s	2	4½
2–36s, 58s	4	8
2–48s, 64s	5	5
2–60s, 70s	6	8

Rules Against Rail-and-Water Rates on Wool

WASHINGTON, D. C.—The Interstate Commerce Commission held in a decision Jan. 28 in the wool rates investigation that it has power to establish through routes and to prescribe reasonable joint rail-and-water rates on shipments of wool from the interior moving via Pacific ports and the Panama Canal to Boston and other north Atlantic ports, but found that the establishment of such through routes and joint rates at present is not necessary nor desirable.

The Commission rules on complaint of the Boston Wool Trade Association that the failure of the carriers to establish joint rates and to issue through bills of lading is not unjust, unreasonable or otherwise unlawful. Commissioners Eastman, Esch, McManamy and Taylor dissented to the findings of a majority of the Commission.

HOBOKEN, N. J. The United States Testing Co. has taken out a permit to make alterations in its plant at 1415-21 Park Ave., and will proceed with work at once.



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Boston and New England States—Messrs. H. W. Dwight and Walter Skerry, 10 High St., Boston.
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RAYON AND SILK YARNS

Cotton Mills Are Using More Rayon

Domestic Makers Note Larger Demand, Though Imported Rayon Finds Some Favor

The rayon market was rather active last week with large quantities being taken for spot deliveries and substantial future bookings being accepted on a price basis that is only nominally below the list. The increase in buying at this time comes as no surprise to the trade who have looked for a marked increase in activity right along. Quantities of rayon moving at present are thought to constitute a record. The most marked expansion in buying just now seems to come from the cotton trade which is increasing production steadily. Reductions in the price of both raw cotton and rayon during 1926, have already had the effect of stepping up the interest in regular cotton and rayon mixtures.

The imported yarns are furnishing competition of the keenest sort, with Italy making the most determined bid to market their production. The figures of the Bureau of Foreign and Domestic Commerce are interesting as showing that Italy has taken a dominating position in December in the question of imports. Out of slightly over a 1,000,000 lbs. total for December, Italy alone accounted for 518,000 lbs. Next in line was the Netherlands with 151,000 lbs.

It is understood that additional experiments are being conducted by a number of silk houses with a view of using the finer denier rayon yarns. Some of the results obtained last year were highly satisfactory although obtained as the result of rather costly trials. Certain satin numbers were fully equal to pure silk and as a matter of fact superior in some respects.

A New Wool Substitute

Arrangements for the sole sales representation of a new substitute for wool, known as Woolana, have been concluded by Irving Horowitz, 66 Grand Street, New York. The company states that this synthetic fiber is made in Italy and that it is proposed to build factories in England and in the United States. It is claimed that the material has the warmth and other qualities of wool and that it will sell at 40 to 50% under the price of the cheapest scoured wool.

PATERSON, N. J. The Emerold Silk Co. adopted an increased production schedule last week, with the establishment of a night working force, and will run on day and night basis until further notice.

Canton Silk Heavily Bought

Low Prices Attract Manufacturers Who Face Sharply Competitive Market in Finished Silks

ALL through the month of January Canton silk experienced a demand both in the raw and thrown state, that has exceeded anything noted since early in 1926. From a dragging, dull market that had only occasional speculative buying from dealers to sustain it, the Canton market suddenly became a lively, active affair. To furnish the real basis for an advance in price there was that most vital factor present, an increasing demand from manufacturers who were turning to 14/16's in larger and larger numbers. This switch from Japans occurred because the New Style 14/16 offered the only real solution to the difficult price situation existing in piece goods.

Through the fall months of 1926, the price for New Style 14/16 sank lower and lower. From $4.50 it dropped to $4.10, rallied to $4.30 and then dropped again. At the $4.00 level dealers bought speculatively believing firmly that it was cheap. Unquestionably it was cheap but it took some time to bring this clearly to the attention of manufacturers and those who bought at $4.10 and at $4.00 had the sad experience of seeing prices go down to $3.80. As a matter of fact L/C business for shipment via Suez or Panama was put through as low as $3.75.

Early in January under the influence of more active buying for mill account, prices firmed up slightly and the very low quotations were unobtainable. At the same time importers sold against stock and bought silk for shipment via Suez which lopped off 8c to 10c a pound on the cost. As stocks were cleaned out the price stiffened only slightly due to this hedging against the slower shipment. Later in the month as silver exchange advanced, increasing the cost, prices rose first to $4.00 and then to $4.05. At the present it stands at this level with stocks of raw Canton not over large in New York.

The belief that prints will again be good later in the spring is understood to be partly responsible for some of the recent strength. Jobbers have bought grey goods for printing purposes in rather large quantities. In addition the competition from weighted goods has forced manufacturers making pure dye crepe-de-chines to cast about for some method of bringing down their costs and Canton at $3.90 a pound obviously offered the solution. Combined, these two factors have put Cantons in a strong position and it is the belief that a further advance in price is likely. This advance cannot go too far, however, without destroying the favorable price differential as Japan grades in the meantime have slipped a peg. It need not go much further to give dealers who bought at $3.85 an attractive profit.

Algerian Silk Production

The 1926 campaign for silk raising in Algeria is now terminated, with the net result of 8,000 kilos of raw silk produced, according to a report from Vice Consul David Williamson, Algiers, made public by the Commerce Department. This is the same as the 1925 figure. The number of persons engaged in the industry, however, increased from 277 to 325 which leads to the expectation that the production in future years will increase. The Government will again distribute silkworm eggs next spring and will continue its policy of buying at a fixed price all cocoons developed from eggs it distributes. The distribution of mulberry cuttings will also continue in the hope that sufficient mulberry trees will be grown eventually to insure nourishment for a vastly larger quantity of silk worms than can now subsist.

Swiss Silk Trade Declines

WASHINGTON, D. C.—The sharp decline in the export of spun silk and other silk goods from Switzerland which was reported for the first and second quarters of 1926 continued throughout the third quarter, and at this time there is believed locally to be little prospect of any immediate improvement, states Consul C. M. Hitch, Basel, Switzerland in a report to the Department of Commerce.

The dullness in the trade is attributed solely to over-production in the United States of all lines of manufactured silk goods during the last year.

The spun silk trade with the United States during the first nine months of 1925 was valued at $1,518,875 as compared with $626,325 in the first nine months of 1926, which represents a decrease of $892,550. This amount added to $80,376 decrease for other lines of silk goods, makes a total decrease of $972,926.

Concession Granted to Establish Silk Culture in Honduras

A concession of 2,000 hectares (hectare equals about 2.5 acres) of national land and other privileges have been granted by the Honduran National Congress for the purpose of establishing silk culture in Honduras on a basis such as to make it a national resource, says a report from Consul George P. Shaw, Tegucigalpa, made public by the Department of Commerce. The concessionaire undertakes to import trees and silk worms suitable to the climate and soil and to teach operators to handle them. The concession runs for 10 years.

Thrown Silk Quiet

Prices Ease Off Somewhat as Raw Silk Declines

The thrown silk market moved lower last week reaching the lowest basis since the severe break in prices in 1924. While active only in spots, which is to say special constructions such as three thread georgette and three thread Canton, significant developments were not lacking. One of the most interesting was the willingness of manufacturers to book orders in three and also four thread crepe for deliveries running through February, March, April. This does not represent speculation on their part but simply the fact that their own customers have placed orders with them

DOMESTIC RAYON PRICES

Denier	"A"	"B"	"C"
55	$2.45	$2.30	$2.20
55	2.35	2.15	2.05
75	2.25–2.30	2.05–2.10	1.95
80*	2.40	....	....
85	2.15	2.00	1.90
100	1.90	1.75	1.65
100*	2.05	....	....
120	1.75	1.65	1.55
125	1.70	1.60	....
130	1.65	1.55	1.45
140	1.55	1.45	1.35
150	1.45	1.40	1.25–1.30
150*	1.60	....	....
170	1.40	1.35	1.25
170*	1.55	....	....
200	1.40	1.35	....
200*	1.55	....	....
300	1.25	1.20	1.15
450	1.20–1.25	1.20	....
600	1.15–1.25	1.20	....
750	1.15	....	....
900	1.15–1.20	....	....

* Multi-filament.

CELANESE

Denier		Denier	
45	$4.75	170	$2.85
75	3.75	200	2.75
100	3.75	250	2.70
120	3.50	300	2.70
150	2.90		

BEMBERG (Cuprammonium)

Denier	Filaments	Price
40	30	$4.25
60	45	3.65
80	60	3.50
100	75	3.25
120-A	90	2.90
120-B	90	2.35
150-A	112	2.50
150-B	112	2.15
180	135	2.30
240	180	2.25
300	225	2.25

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Rayon and Silk Yarns—Continued

running up till July. The fact that large jobbers and cutting up trade buyers are willing to go this far ahead is an indication of the way they view the market.

Another active week was experienced in the Canton market with the three thread 14/16 number again heavily bought. Nearly every thrown silk house has characterized the demand for Canton crepe as extraordinarily active during January. In some cases Canton business from practically nothing has grown until it now represents more than half of their entire sales. The price of Canton crepes was advanced again last week in the face of weakness in Japans.

(60 days basis)

Japan Organzine, 2 thd, Grand Double Extra, in skeins	$7 10
Japan Tram, 3 and 4 thd, in skeins	6 10
Japan Tram, 5 thd, on cones	6 05
Japan Crepe, 3 thd, Crack XX, on bobbins	6 90
Japan Crepe, 4 thd, Crack XX, on bobbins	6 85
Japan Radium, 3 thd, Crack XX, on cops	7 00
Canton Crepe, 3 thd, N. S. 14/16, on bobbins	6 30
Tussah Tram, 2 end on cops	3 60

Spun Silk Quiet

Slightly Better Demand for Immediate Deliveries

Business in spun silk has given evidence of a steadily expanding demand during January principally for nearby deliveries. At the same time sellers did not characterize the market as active just yet. Improvement has been noted in the interest in quantities for immediate, but the betterment is going along slowly. Prices were steady and unchanged. Buyers are of the opinion that no movement upward is possible despite the admitted low level of prices. This may prove to be a mistake as price levels as low as they are today have spurred buying in the past and can well do so again. Quotations are as follows:

(2% net 30 days)

60-2	$5.40	40-2	$5.05
50-2	5.25	62-1	4.40

Rayon Waste Quiet

Prices Hold Nominally Unchanged in Dull Market

There was no change to speak of in the rayon waste market last week and prices held nominally unchanged. Higher grade types of waste are still feeling the competition from the inferior which alone seem to interest users these days. Such small business as was going on concerned itself principally with the colored thread waste and quantities of thread waste for mixtures.

Imports of waste and yarns made from waste gained sharply in December as compared with the previous three months. December imports amounted to 553,000 lbs. as against 175,000 lbs. in November. More than 50% of this total came from Italy which seems to be the dominating factor both in imports of rayon and rayon waste. Prices are as follows:

Open bleached waste	26 @ 30c
Open unbleached waste	23 @ 25c
White thread waste	21 @ 23c
Colored thread waste	10 @ 12c
Bleached noils	21 @ 25c
Unbleached noils	18 @ 20c

Manchurian Tussah Silk Crop Small

Reports from the two producing centers for tussah silk in South Manchuria, at Kaiping and Antung, indicate that this year's production will be only 80% of normal, according to advices from Vice Consul A. I. Ward, Mukdon, made public by the Department of Commerce. The poor crop is due to the drought in the early growing season and heavy rains during the late summer.

Why Spinners' Prices Vary

(*Continued from page* 475)

these same spinners today are willing to consider propositions decidedly below the average level. They have realized they were above the market and have not sold their yarn and therefore are making prices which may enable them to book business. As said above, this may not be a complete explanation of the present rather mixed situation and of irregular price levels but it offers a plausible explanation of certain of these varying conditions.

From the Buyer's Standpoint

It is also apparent that buyers have for the most part over-stayed their market. In other words, a determination to secure the bottom usually meets with failure. Now that the market has turned the buyer realizes he has not bought yarn as cheaply as he might have bought it had he grasped the opportunity several weeks ago. It is peculiar that this knowledge does not make for increased interest in the market at the present time. While admitting that he has let the opportunity slip to buy at the lowest level and that today he cannot get the deliveries which were possible on specific spinning a month ago, the present situation is not such as to cause him to anticipate to any material degree. He is hoping against hope that the market may weaken again and that he may be able to come in and secure as favorable figures as those obtained by his competitors. Such a possibility does not seem likely at the moment for notwithstanding the lower prices quoted in individual cases the market generally is fairly firm and with an upward tendency.

Interest in Knitting Yarns

More interest has been evinced in knitting yarns this week than in weaving. It is evident that a fairly large volume of business has been placed with knitters both in New York State and elsewhere but there is a feeling that the total of this ordering has been exaggerated. For instance, a report is current that one direct seller has taken a million pounds within the last few weeks in New York State and other mills not using this quality of yarn are also reported to have bought liberally, aggregating amounts whcih would seem to indicate, if reports are to be believed, that the majority of New York State knitters

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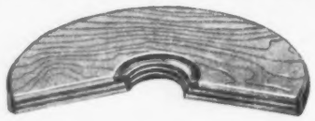

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Furnished in any size, thickness and thread.

Natural finish or any color. Hard or soft wood plies.

From tread to thread the COLUMBIA Rubwood is the strongest and most durable Jack Spool Head ever made.

ECONOMICALLY PRICED
STANDARD EQUIPMENT IN THE LARGEST NEW ENGLAND MILLS
VULCANIZED — NOT GLUED
FURNISHED SEPARATELY AS REPLACEMENT HEADS OR MADE UP ON COMPLETE SPOOLS AS DESIRED

COLUMBIA WHEEL COMPANY
Westfield, Massachusetts.

Forty-Four Fulling

The Most Highly Concentrated and Efficient Fulling Soap Ever Produced

Only 80% as much is needed to make up a fulling solution of the required consistency and lubricating value as of any other Soap made. It combines the quick fulling property of a heavy bodied Soap with a remarkable ease of discharge in washing; goods scour cleaner in less time at less cost of steam and water, allowing brighter colors and better handle; prevents flocks and increases capacity through saving in time.

THE HOLBROOK MFG. CO.
Jersey City, N. J.

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LOOM PICKERS and LOOM HARNESSES
GARLAND MFG. CO. SACO, ME.
TRADE MARK

FA QUALITY

TRIMMINGS FOR RAYON UNDERGARMENTS

SHOULDER STRAPS—LINGERIE BRAID
TUBING—ELASTIC—EDGINGS—
BINDING—NOVELTIES—GARTERS

48 Colors—"Buy Trimmings That Match"

FRIEDBERGER-AARON MFG. CO.
18th & Courtland Sts. Philadelphia

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Manufacturers of
TAPES, BINDINGS AND NARROW FABRICS
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Tapes, Braids and Bindings
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HUMIDIFYING
Ventilating — Summer Cooling — Winter Heating — Automatic Control
Aerophor Mertz System, Blower System, Spray Head System and others.
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L. T. IVES CO.
Established 1874 Manufacturers of all kinds of
Spring Knitting Needles
Slides, Sinkers, Jacks, Etc.
NEW BRUNSWICK, N. J.

Do you read the Textile Clearing House every week?

Rayon and Silk Yarns—Continued

have bought their requirements for the season. And yet it is known that this is not the case and that there is still a considerable amount of knitting yarn to be bought. The trade have given up any idea of buying 22s cones at 25c. One knitter is known to have placed a fair amount of business at this figure several months ago and reports last week were to the effect that business had been taken at 26½c. The majority of spinners today want anywhere from 27½ to 29c. and are also asking 32c. for 30s but the latter figure is above the market and business has undoubtedly been done decidedly below it.

Raw Silk Lower

Quotations for Japan Grades Sag Again, While Cantons Advance

Strength in Canton silk last week was more than offset by renewed weakness in the more important Japan market. Japan grades sold at the lowest since early in 1924 and Crack XX 13/15 white silk was available at $5.70 on New York terms from many sources. Crack 20/22's could be bought at $5.50 and possibly this price could be bettered. Buying did not seem to take any particular spurt on the strength of the low prices but here and there some greater interest was noted. Broadsilks accounted for the major part of the buying that went on with the hosiery trade content to sit back and wait.

The Canton market got above $4.00 a pound for 14/16's for the first time on the recovery. Actually the cost of this grade was somewhat above $4.00 but resale parcels held quotations nominally to this level. Supplies of Canton locally appeared to be much reduced.

(90 days basis)

Japan Filature Grand Double Extra	13/15	$6.00
Japan Filature Crack Double Extra	13/15	5.75
Japan Filature Double Extra	13/15	5.65
Japan Filature Best X	13/15	5.60
Japan Filature X	13/15	5.55
Japan Filature Best No. 1/X	13/15	5.52½
Canton Filature New Style	14/16	4.05
Canton Filature New Style	20/22	3.75
Shanghai Steam Filature "Three Dancers"		6.00
Tussah Filature 8 cocoon		3.20

HOPEWELL, VA. The Allied Chemical & Dye Corp., New York, has purchased about 300 acres of land from the Tubize Artificial Silk Co. of America, and other land owners in Hopewell. Announcement of the company's plans will be made within a short time.

Mfrs. Textile Assn. Elects

The Manufacturers' Textile Association reelected its former officers at the annual meeting and dinner held at the Bancroft Hotel, Worcester, Mass., on Jan. 27. They are: President, Arthur C. Comins, president and manager of the J. D. Clark Co., Rochdale, Mass; first vice president, J. Alonzo B. Taylor, president of the Channing Smith Textile Corp., Cherry Valley, Mass.; second vice-president, E. Benjamin Armstrong, agent for the Hamilton Woolen Co., Southbridge, Mass.; secretary, Roger M. Grimwade, secretary and superintendent of the Charlton Woolen Co., Charlton City, Mass.; treasurer, Edward I. Comins, superintendent of Comins & Co., Inc., Rochdale, Mass.; executive committee, the officers and George W. Norwood, treasurer of the Thayer Woolen Co., North Oxford, Mass., and John Francis Legg, vice president and treasurer of the Worcester (Mass.) Woolen Mill Co. The latter succeeds Philip M. Pfaffmann, proprietor of Hunt's Mill, Worcester.

Following the dinner there was a discussion of the Capper and Smoot bills pending in Congress with the members favorable to the latter amendment although no vote was taken.

German Mills Increase Operations

BOSTON.—The spinning and weaving mills of Germany increased their operations during December, but the yarn and cloth business of the country fell off somewhat during that month, says the Garside Cotton Service. As a result of the pronounced recovery of the industry in recent months, friction with the workers developed in regard to wages and working hours, creating some uncertainty as to the future.

"It is estimated that the spinning mills of Germany ran at 90 to 100 per cent of full operations in December," says the Garside Service. "In most districts they worked almost their full schedules. The weaving mills ran about 90% in December. During November the spinning and weaving mills ran at only about 80%, and last June only about 55%."

SUMMARY OF SILK CABLES

Best No. 1/X Yokohama	1390 Yen
Exchange at 3 m/s	49½
Cost C. I. F. New York	$5.45

The raw markets were mixed last week with strength in Canton over-shadowed by weakness in Yokohama. In Yokohama prices slipped another notch to the basis of 1400 Yen for Saiyu. This is the lowest the grade has sold in the current decline. Transactions were small throughout the week, 2,100 bales being the total which, however, is only slightly below the reduced arrivals coming from the interior. Sentiment was reported as somewhat firmer despite the drop to 1400 Yen due to the possibility of the exchange rate moving down during the coming spring. This would serve to bolster up prices in Yen. The Canton market held strong although a sensational advance in silver raised the laid down cost of silk in New York by some 3% or more.

"SASE"

Trade Mark Reg. U. S. Pat. Off.

A New Product Spun from 100% Synthetic Fibre

"SASE" is a new textile material which has the lustre, evenness and softness of spun silk.

"SASE" has unusual elasticity for either knitting or weaving.

"SASE" has been produced for use by Silk Mills, in fine numbers for warp, in heavier numbers for filling, both plain and crepe.

"SASE" is for Worsted Mills desiring a silk-like bloom on their goods and a softness attainable only with the highest priced worsteds.

"SASE" is for Cotton Mills wishing to produce a cloth akin to silk.

"SASE" is for Hosiery Mills wishing a yarn with the mild lustre and the softness of silk.

"SASE" is for Sweater and Scarf manufacturers desiring a soft yarn with silk effect.

"SASE" dyes easily and evenly with cotton colors.

"SASE" has no cotton fibre content.

"SASE" is put up for delivery in Warps, Beams, Cones, Cops, Tubes and Skeins. Single and Ply.

"SASE" is *ready for use without any special preparation.*

Manufactured only by

Fitchburg Yarn Co.
FITCHBURG MASSACHUSETTS

ROBERT S. WALLACE, TREAS. AND GEN. MGR. F. L. BRAYTON, SALES MGR.

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Carbonizers and Neutralizers
of
Scoured Wools and Noils
by the
Dry Gas Process

Produces a wool and noil of attractive feel, uniform color, less shrinkage and greater fibre value.

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P. O. Box 41 Hazardville, Conn.

EAVENSON & LEVERING CO.
Scouring AND Carbonizing of WOOL AND NOILS
Depainting of Wool and Noils a Special Feature of our Business
Philadelphia and Reading Railway Sidings
CAMDEN, NEW JERSEY

WOOL CARBONIZING
Sulphuric Acid and Chloride of Aluminum Processes
Also Wool, Noils and Waste
Sorted, Scoured and Carbonized
GILET CARBONIZING CO., INC.
James Gilet, Pres., Treas. and Mgr.
LOWELL, MASS.
Experience of 30 Years in Verviers (Belgium) and in the U. S. A. At your service

FLOCKS
WOOL AND COTTON
FOR FLOCK PRINTING, RECORD, RADIO, WOOLEN AND RUBBER MFG.
Trial Samples Supplied Gratis
CLAREMONT WASTE MFG. CO., DEPT. W, CLAREMONT, N.H.

ALL STEEL
ECONOMY
FIRE PROOF
BALING PRESSES
ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.
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FOREIGN WOOL
IMPORTERS, DEALERS
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ERIE AVE. at 2nd STREET, PHILADELPHIA, PA.

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SOLWAY DYEING & TEXTILE CO.
PAWTUCKET, R. I.
Dyers, Bleachers and Mercerizers of Cotton Yarns, Warps or Skeins
ABSOLUTELY FAST COLORS

THE J. R. MONTGOMERY CO. WINDSOR LOCKS, CONN.
Manufacturers of
MERCERIZED COTTON YARNS Give the high Silk-like lustre In Knit Goods and Woven Fabrics
NOVELTY YARNS Poucle, Bourette and Spirals in Cotton, Wool, Worsted, Mohair and Silk. COTTON WARPS On Beams, Jacks, Spools and Tubes In Fancy Twist, Colors and Printed.

ANALYTICAL AND CONSULTING CHEMISTS TO THE TEXTILE INDUSTRIES
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210 South 13th St., Philadelphia, Pa.
Established 1891 Phone—Pennypacker 7594

Chicago Wool Company
SCOURED WOOL
200 Summer Street - Boston
1907-17 Mendell Street - Chicago
140 S. Front Street - Philadelphia

Swift's WOOLS
Boston Philadelphia Chicago

GORDON BROTHERS, INC.
HAZARDVILLE, CONN.
Reworked Wool, Wool Waste
Custom Carbonizing by Dry Process

LEONARD C. PRATT
Wools, Tops and Noils
106 Chestnut St. Philadelphia 184 Summer St. Boston

Hallowell, Jones & Donald
FOREIGN WOOL DOMESTIC
252 Summer Street : BOSTON

General Fiber Co.
Reliable Graders of
WOOLEN RAGS
Chicago—Illinois
Graded Linseys a Specialty

M. SALTER & SONS
Graders of
WOOLEN RAGS
Manufacturers of
REWORKED WOOL
CHELSEA, MASS.

Looms
The Standard for All Narrow Fabrics
FLETCHER WORKS
Formerly Schaum & Uhlinger
Philadelphia

WOOL

Wastes and Fibers Not Urgently Needed

Lull in General Operations—No Adjustment to Goods Opening Seems Necessary

A quiet situation prevails in recovered materials, old woolen rags and clips. There is no mill buying in any volume. Reworked wool men in particular are conspicuous by their absence in the old woolen market. Mills are interested in clips and are buying sparingly to meet their immediate needs. It is between seasons and the results of the opening are not likely to develop to any appreciable degree much before the middle of next month. Light hoods are encountering as much interest as anything. This is a very valuable collection of knit stocks of many colors. In the Dewsbury market where the sorting is carried out thoroughly the various shades and colors can be purchased separately and this allows American importers to bring in such materials as Alice blue, rose and other shades. The English materials are uniformly better skirted than ours and when the white stocks are carbonized there is less shrinkage.

Reworked wool manufacturers have had a varied business for several months but in the main it has been far away from the old lines of production when before the war huge quantities of all kinds of colored rags were carbonized and picked, finding a ready market among the woolen mills. Carbonized carded blue serge was in good demand in those days and in July 1912 was selling at 16c which price may be compared with current quotation of 23c which shows an advance of 43%. The general commodity level is up about 50% from July, 1914, so that this material cannot be considered out of a line in the matter of values.

There is a widening in the range of demand for soft rags in the Dewsbury market. The best call however is still for rags that are in small stocks. This has been the feature of our own domestic market for a long time as everybody knows. Graders in Dewsbury as in the various American markets are handicapped by having capital locked up in large unsaleable stocks of coarse covered materials.

Wool waste traders are watching with great interest the openings believing that sooner or later there will be a good call for mill wastes. Waste houses point to the fact that prices on all sorts have been steadily declining for two years or more and that at the present time a very firm situation prevails. They do not see how anything can occur from the goods opening to lower values on good white wastes.

Wool Continues Progress

Demand Sufficient To Sustain Values—Australians Arrive

BOSTON.—Another week of steady progress in the wool trade. The fall goods showing has been formally opened by the American Woolen Company and on a price level related strictly to basic prices for raw materials and has met with general favor in all markets. The foreign markets continue strong everywhere. Europe is buying heavily in Australia, South America and for immediate needs in London and at firm to advancing prices. Four million pounds of Australians arrived in Boston at the beginning of the week.

The South American clips are said to be 75% sold but American buying has been much below normal in Buenos Aires and in Montevideo. The wool trade inventory disclosed fairly heavy stocks of South Americans in bond for which wools however there has been a steadier and larger demand at firmer prices during last week. As items of general interest bearing on the wool situation it may be noted that fine wools in London have advanced under the impetus of French buying. Bradford topmakers lifted their 64s and 60s tops a penny per pound. In Melbourne, Japan bought choice merinos, 64s-70s at prices equivalent to $1.03-$1.08 clean landed bond Boston while in Brisbane even higher prices were recorded.

The demand for wool in the United States continues sufficient to sustain values and if there is any buying movement of consequence following the openings better prices will be seen. The world situation is particularly strong. Clearings the first half of the Australian season were larger than anticipated leaving only 998,500 bales in stock at the close of the year. Since then there has been large and steady buying on a generally rising price scale. Bradford buyers waiting for London to open, hoping that lower values would be registered had another shock when the best wools rose 5% and have maintained themselves on the advance ever since. The surplus stocks of wool accumulated during the war approximately equal to the world clip of three billion pounds have disappeared.

Wools in the British market are in better demand and in London France is operating quite extensively in merinos. British wool machinery is more active also. Wools are arriving in England from the Colonial markets in good large quantities but no larger than is usual at this time of the year. Fine crossbreds in particular are in active demand and in short supplies.

Wool and Substitute Quotations

(Corrected at close of business on Wednesday)

WOOL

Ohio, Pennsylvania and West Virginia

Fine delaine	.45—.46
Fine clothing	.40—.41
½ blood	.45—.46
⅜ blood	.45—.46
¼ blood	.45—.46

California (Scoured Basis)

Northern, 12 mo.	.98—1.02
Southern, 12 mo.	.87— .90

Texas (Scoured Basis)

Fine 12 mo.	1.03—1.05
Fine 8 mo.	.87— .90

Pulled—Eastern (Scoured Basis)

A-A	1.05—1.08
A-Super	.90— .93
B-Super	.83— .85
C-Super	.70— .73

Montana, Idaho and Wyoming (Scoured Basis)

Staple fine	1.10—1.12
Do. ½ bld.	.98—1.00
Fine & fine medium	.97— .98
⅜ blood	.88— .92
¼ blood	.78— .82

Mohair—Domestic

Best combing	.75—.80
Best carding	.65—.70

Mohair—Foreign (In Bond)

Turkey Fair av.	.42—.43
Cape Firsts	.43—.45

Foreign Clothing and Combing (In Bond)

Scoured Basis—Cape:	
Super 12 months	.95—1.00
Super 10-12 months	.98— .92
Australian:	
70s	1.07—1.10
64s	.97—1.00
58—60s	.85— .87
Grease Basis:	
Montevideo:	
58—60s	42—43
56s	40—41
50s	37—38
Buenos Aires:	
4s, 40—44s	29—30
5s, 36—40s	27—28

Foreign Carpet (Grease Basis in Bond)

China: Combing	.29—30
Szechuen ass't	.26—27
Cordova	.24—25
Scotch Black Face	.23—24
East India: Kandahar	.34—37
Vican'r	.40—44
Joria	.45—50
Aleppo	.36—37
Iceland, class 1	.38—39
Iceland, class 2	.34—35

SUBSTITUTES

Wool Waste

Lap—	
Fine White	1.10—1.12
Fine colored	.85— .88
Thread White Worsted—	
Fine	.78— .80
½ blood	.73— .75
⅜ blood	.65— .68
¼ blood	.53— .55
Thread Colored Worsted—	
Fine	.36— .38
½ blood	.33— .35
⅜ blood	.30— .33
¼ blood	.28— .30
Card—	
Fine white	.50— .53
Medium white	.38— .40

Old Woolen Rags

Merinos—	
Coarse light	7½— 8
Fine light	16½—17
Fine dark	5 — 5½
Serges—	
Blue	7 — 7½
Black	6 — 6½
Red	12 —13
Knit—	
White	42 —43
Red	14 —15
Light-colored	22 —23
Worsteds—	
Light	8½— 9
Blue	7½— 8
Black	7½— 8

Phila. Market Quiet

Contracting in Montana and Wyoming Surprises Trade

PHILADELPHIA.—There is a fair to good potential demand for grease wools from manufacturers and spinners but offers made are so far under dealers' ideas the total volume of wool changing hands this week has been small. A condition just the reverse of that formerly found is reported, interest at this time being for fine, half blood and three-eighths with practically no demand of importance for quarter blood. Pulled wools have been less active, there being up until last week a good request for fine and low pulled, good sized quantities of fine pulled selling around $1.00, going into duplicate orders for lightweight dress fabrics. Sales this week have been small, with less interest found in Bs than other grades.

Quarter-Blood Quiet

Lack of demand for quarter-blood grades is largely due to small interest displayed by knitting yarn spinners in this section, a majority of whom are not receiving a large volume of new yarn contracts as yet, bathing-suit yarn sales having been small to date. Dealers are holding bright quarters at 43c; small sales of low have been made at 39c and burry and seedy at 35c.

A similar condition is reported in pulled wools, demand being largely for fine and low grades with Bs showing little interest during the last two weeks. Fine wools selling at $1.00 are easy to move while there is a fair demand for Cs at 72c to 75c for white. Average Bs are quoted at 80c to 82c this week; LBs at 85c to 87c. Combings continue active, medium grades being in best request. Prices of these wools have been proportionately lower than corresponding grades in fleece.

Carpet wools are holding steady at the level quoted during the last two months. While the Liverpool sales, which closed recently, saw prices advanced 5% over the previous sales of East India wools, dealers here made no change in quotations although this caused them to hold firmer.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Jan. 29, based upon data compiled by the Market News Service of Bureau of Agricultural Economics, Department of Agriculture, are as follows, in lbs.:

	Week Ended Jan. 29	1927	1926
Domestic	3,581,000	8,881,000	4,600,000
Foreign	4,004,000	11,986,000	28,125,000
Total	7,985,000	20,867,000	32,725,000
IMPORTS AT PRINCIPAL PORTS			
Boston	4,004,000	11,986,000	28,125,000
Philadelphia	1,396,000	7,986,000	4,449,000
New York	1,259,000	5,960,000	7,579,000
Total	6,649,000	25,812,000	40,153,000

NATIONAL SUPERCHROME BLACK T

A NEW dye for wool in all stages of manufacture. Possesses excellent solubility. Dyes level and with good penetration. Product samples with dyeing directions are available from any of our branches.

National Aniline & Chemical Co., Inc.
40 Rector Street, New York, N. Y.

BOSTON	PHILADELPHIA	SAN FRANCISCO
PROVIDENCE	CHICAGO	MONTREAL
HARTFORD	CHARLOTTE	TORONTO

NATIONAL DYES

DYESTUFFS AND CHEMICALS

Chemical Salesmen Meet for Dinner in New York

The Salesmen's Association of the Chemical Industry held its monthly dinner and meeting at the Machinery Club, New York, Friday, Feb. 4.

Two excellent addresses were presented: One on "The Sanctity of Contracts" by William Zinsser, and one on "Purchasing Agents" by Howard S. Nieman. Both were followed by discussion. A program of entertainment concluded the evening.

Bulletin Describes a Fast Acid Blue

A new bulletin issued by the Newport Chemical Works, Inc., Passaic, N. J., describes Newport Fast Acid Blue SR. The announcement outlines the following properties:

"Newport Fast Acid Blue SR is recommended for the dyeing of woolen piece goods, yarns, felt, shoddy, etc., in all types of machines. It possesses very good general fastness properties, especially to light, perspiration and salt water. It is of value for shading chrome navies and blacks, also for dyeing wool in union materials from neutral baths. Effect threads of cotton and rayon are left white, while silk effects are only slightly stained."

Dyers and Finishers Hold Annual

National Association Meets at Providence—C. I. Keegan Elected President for New Year

THE National Association of Textile Dyers & Finishers held its annual meeting at the Biltmore Hotel, Providence, R. I., on Saturday Jan. 29 and elected the following officers:

President, Charles I. Keegan, Danielson, Conn.; First vice-president, John F. Campbell, Rockville, Conn.; Second vice-president, Fred Eayrs, Leominster, Mass.; Third vice-president, John C. Marley, Lawrence, Mass.; Fourth vice-president, John Leighton, East Douglas, Mass.; Fifth vice-president, Andrew Ewart, Providence, R. I.; secretary, Arthur Goosetrey, East Greenwich, R. I.; treasurer, William E. Chamberlin of Woonsocket, R. I.; executive secretary, Frederic L. Babcock, Cambridge, Mass.

Executive committee: James J. Burns, Washington, R. I., chairman; John J. Heffernan, Blackstone, Mass.; James Wilson, Olneyville, R. I.; Armand Henault, Danielson, Conn.; Philip Bresette, Woonsocket, R. I.; Walter Gledhill, Olneyville, R. I.; Peter Riley, Providence, R. I.; Merton Duxbury, Westboro, Mass.; Richard Eayrs, Washington, R. I.; J. C. Mitchell, Woonsocket, R. I.; Carl Tapper, Uxbridge, Mass.

The meeting was attended by 150 members and guests. The retiring president, John J. Heffernan of Blackstone, Mass., delivered a stirring address, reciting the last years' developments in the association, particularly with reference to the activities of the Problem Council, made up of highly skilled dyers and finishers, who have handled several hundred important manufacturing troubles presented to the association by its members and without exception have found a suitable solution for every problem offered.

The newly elected president, Charles I. Keegan of Danielson, Conn., in his opening address spoke of the great importance of dyeing and finishing to New England, showing the progress of wool and cotton through carding, spinning and weaving, then stressing that it was only after application of the skilled art of the dyer and finisher that the fabric was made suitable for public consumption. He cited as evidence the wonderful variety of dyed and printed fabrics displayed in all store windows and worn by the multitude of men and women of the world. He pointed with pride to the progress of the National Association of Textile Dyers & Finishers along progressive lines and laid much stress upon its importance to the textile industry at this critical period.

The report of Treasurer William E. Chamberlin, of Woonsocket, R. I., showed the association in a strong financial condition and the report of Executive Secretary Frederic L. Babcock, of Cambridge, Mass., showed increased membership and growing interest in this organization, now entering on its sixth year as an active factor in the up-building of the New England textile industry.

An elaborate entertainment was put on under the direction of Past President James J. Burns, of Washington, R. I., and at 3 P. M. dinner was served.

British Chemical Situation

Progress Recorded by British Chemicals and Dyestuffs

WASHINGTON, D. C.—Although the prospects for 1926 were nullified considerably by the long coal stoppage, British chemicals and dyestuffs industries made good progress in research and in the consolidation of similar commercial interests, states a report from the American Consulate-Gen-

Miscellaneous Chemicals

Alumina Sulp. com.	1 40	— 1 45
Iron Free	2 00	— 2 05
Alum. Ammonia Lmp.	3½	— 3½
Potash, Lump	2¾	— 3½
Ammoniac, Sal. white gr., dom.	5½	— 6½
Bleach powder, per 100 lb. works	2 00	— 2 40
Blue Stone	4¾	— 5
Calcium Arsenate	7½	— 8
Chlorine, Liq. Cylinders	5½	— 9
Tanks	4	— ...
Copperas, ton	13 00	—19 00
Cream of Tartar	20½	— 21½
Epsom Salts, 100 lb.	1 25	— 1.90
Formaldehyde Spot	11½	— 12
Glauber Salts, 100 lb.	90	— 1 15
Glycerine (C. P.) bbls.	30	— 32
Cans	31½	— 33½
Yellow Crude	30	— 32
Hydrosulphite Conc	24	— 25
Lead—Brown acetate	13	— 13½
White (crystals)	14	— 14½
Lime, acetate, 100 lb.	3 50	— ...
Potassium—Bichromate	8	— 8¼
Chlorate crystals	8	— 9
Permangan, tech.	14	— 14¼
Sodium acetate	4¾	— 5
Bichromate	6½	— 6¾
Bisulphite, 35%	1 50	— 1 75
Nitrite	8½	— 9
Phosphate	3¾	— 4¼
Prussiate, yellow	11½	— 12
Sulphide, 60% fused.	3½	— 4
30% crystals	2¼	— 2½
Tartar emetic, tech.	29	— 31½
Tin—Crystals	47	— 47½
Bichloride, 50 deg.	20	— ...
Oxide, bbls.	72	— 74
Zinc Dust	9½	— 10

Acids

Acetic, 28% per 100 lb.	3 37½	— 3 62½
Citric crystals	45	— ...
Formic, 90%	10½	— 11
Lactic, 22%	5½	— 7
Muriatic, 18 deg. per 100 lb. in tank cars.	85	— 95
Nitric, 36@42 deg. per 100 lb.	5 00	— 6 75
Oxalic	11	— 11¾
Sulphuric, 66 deg. per ton in tank cars.	15 00	—16 00
Tartaric	27½	— 28

Alkalies

Ammonia, aqua, 26 deg.	2¾	— 3¼
Borax, Crys. bbls.	4½	— ...
Potash, carbonate, 80–85%	5¼	— 6
Caustic, 88–92%	7⅛	— 7⅝
Soda Ash, 58% light	1 37½	— 2 44
Contract, 100 lb.	1 32½	— 1 57½
Bicarb, per 100 lbs.	1 90	— 2 25
Caustic, 76% per 100 lb.	3 10	— 3 90
Contract, 100 lb.	3 00	
Sal. 100 lb.	90	— 1 00

Natural Dyes and Tannins

Fustic: Crystals	18	— 22
Liquid, 51 deg.	9	— 10
Gambier, liquid	12½	— 13
Hematine, crystals	14	— 18
Hypernic Ext.—51 deg.	11	— 15
Indigo—Madras	1 30	— ...
Logwood Extract, liq. 51 deg.	8	— 10
Crystals	14	— 18
Osage Orange, Extract, 51 deg.	7	— 7¼
Quercitron extract, 51 deg.	6	— 6½
Sumac, Ext. dom., ref., 51 deg.	6½	— 7
Extract, stainless	10	— ...
Tannic Acid, tech.	35	— 40

Dyestuffs and Intermediaries

Alpha Naphthol, ref.	80	— 85
Crude	60	— 65
Alpha Naphthylamine	35	— 37
Aniline Oil	15	— 17
Salt	24	— 25
Beta Naphthol, sublimed	55	— 60
Technical	22	— 24
Dimethylaniline	32	— 34
Metaphenylene Diamine	90	— 95
Paranitraniline	52	— 53

Oils and Soaps

Castor Oil, No. 3	12	— 13
Olive Oil, denatured, gal.	1 20	— ...
Foots	8½	— 9
Red Oil, 1b.	9	— 10½
Stearic Acid, double presses	12	— 13½
Turkey Red Oil, 50%	10	— 12
Tapioca flour	3½	— 5½

Adhesive and Sizing Materials

Albumen, blood domestic	45	— 55
Dextrine-Potato	8½	— 9
Corn, bags 100 lb.	4 07	— 4 12
Do. bbls., 100 lb.	4 34	— 4 39
Gum, British, 100 lb.	4 37	— ...
Do. bbls.	4 64	— ...
Sago flour	3½	— 4
Starch, corn, 100 lb.	3 32	— 3 42
Do. bbls.	3 59	— 3 69
Do. thin boiling, bags, 100 lb.	3 92	— 4 02
Do. bbls.	4 19	— 4 29
Potato	6½	— 7½
Rice	9	— 9½
Wheat	6½	— 8

Coal Tar Dyes

Direct Colors—		
Black (H-acid)	28	— 35
Black Columbia FF.	50	— 60
Blue, 2 B.	24	— 32
Blue sky, ordinary	60	— 80
Blue, 2 GL.	2 00	— 2 50
Blue, 4 GL.	2 25	— ...
Blue Sky, FF.	95	— 1 50
Blue, Fast RL.	1 90	— ...
Blue, Splamine	2 00	— ...
Benzo Azurine	75	— 80
Brown, C.	40	— 60
Brown, M.	70	— 90
Brown, Congo G.	85	— ...
Brown, Congo R.	80	— ...
Green, B.	60	— 90
Green, G.	65	— 90
Orange, Congo	60	— ...
Orange, Fast S.	1 70	— ...
Red, Fast F.	80	— 90
Red, Congo	40	— 50
Benzo Purpurine, 4 B.	40	— 60
Benzo Purpurine 10 B.	1 25	— 1 50
Scarlet, 4 BA.	1 50	— ...
Scarlet, 4 BS.	2 10	— ...
Scarlet, 8 BS.	2 15	— ...
Scarlet, Diamine B.	1 65	— ...
Violet N.	1 10	— 1 20
Yellow chrysophenine	60	— 1 30
Yellow, Stilbene	90	— 95
Developing Colors—		
Black, BH	40	— 60
Black Zambesi	...	— 90
Bordeaux, Dev.	2 50	— ...
Orange, developed	2 50	— ...
Primuline	1 00	— 1 15
Red, Dev. 7 BL.	2 50	— ...
Scarlet, Dev.	2 50	— ...
Sulphur Colors—		
Black	14	— 24
Blue, cadet	90	— 95
Blue, navy	50	— 60
Brown	20	— 60
Green	55	— 1 50
Green, olive	25	— 50
Yellow	45	— 50
Basic Colors—		
Auramine	90	— 1 00
Bismark Brown	50	— 60
Chrysoidine	40	— 65
Fuschine crystals	1 50	— 1 75
Malachite green	1 50	— ...
Methylene blue	1 10	— 1 25
Methyl violet	80	— 1 15
Rhodamine B. ex' cone	5 50	— 6 00
Safranine	1 45	— 1 60
Victoria Blue B.	3 10	— ...
Acid Colors—		
Naphthol blue blk.	35	— 60
Napthlamine black 4 B.	50	— 55
Alizarine saphirol	2 75	— 4 00
Alkali blue	3 25	— 3 59
Indigotine	75	— 1 30
Induline (water soluable)	75	— 80
Soluble Blue	3 00	— 3 75
Sulphoneyanine	70	— 95
Sulphone Blue R.	60	— 95
Patent Blue A.	2 85	— ...
Rescorcin brown	80	— 90
Guinea green	1 00	— 2 20
Wool green S.	70	— 1 70
Orange II	24	— 30
Orange GG crys.	60	— ...
Acid Fuchsine	80	— 90
Azo eosine G.	65	— 82
Crocein scarlet	1 15	— 1 30
Fast red A.	50	— 65
Azo yellow	1 35	— 1 40
F. Light Yellow 2 G.	2 00	— ...
F. Light Yellow 3 G.	1 00	— 2 50
Naphthol, yellow	1 35	— 1 40
Chrome Colors—		
Aliz. Black B.	2 00	— ...
Diamond Black PV.	70	— ...
Chrome Blue Black	40	— 50
Chrome Brown	60	— 1 25
Chrome Green	75	— 1 50
Chrome Yellow	45	— 1 10
Indigo—		
Synthetic 20% paste.	14	— 14½

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W. H. BANNON & CO.
PROVIDENCE, R. I.

AND *NOW*

SYNTHETIC OLIVE OIL

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It From Pure Commercial Olive Oil

Quality—Always Uniform. Price—Always Less.
Delivery—Over Any Period. Samples—Upon Request

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Einstein has quite possibly upset the accepted theories of matter but the conscientious expert service back of WARREN SOAP is more firmly established than ever.

Warren Soap Manufacturing Company
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Sole New England Agents for LACTAMINE and VIOLAMINE.
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Manufactured by Atlas Electric Devices Co.

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Aniline Colors

Dyestuffs and Chemicals

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Dixon's Patent Reversible and Locking in Back Saddle with New Oiling Device, three Saddles in one, also Dixon's Patent Round Head Stirrup.

Send for samples to
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Textile Manufacturers

Should be interested in DIAX for the following reasons

FOR BLEACHING
Purer whites are obtained, less tendency to weaken fibres, saving of time and chemicals.

FOR DYEING
More level dyeings are obtained with economy of dyestuffs. Thorough degumming of previously dyed and finished goods are easily and cheaply performed.

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Has increased affinity of the cloth for the caustic liquor, gives better lustre, the mercerizing lye kept clearer and lasts longer.

FOR PRINTING
It is especially useful in making adhesive sizes and finishes, and less expensive, and is devoid of color and easily removable.

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Thin fluid mixing are produced which penetrate the cloth better, giving superior results in the handle and feel of the cloth, and economy in the use of starch and dextrine.
Further information gladly given.
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THE "MURDOCK"

Keep Your Spindles fully equipped with the
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Water softeners for throwsters, scourers, bleachers, dyers and finishers

LIME & SODA Softeners
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American Water Softener Co.
S. E. Cor. 4th and Lehigh Ave., Phila., Pa.

MICHAEL & BIVENS
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See also CONSOLIDATED TEXTILE CATALOG

Expert Motor and Transformer Rewinding. Supplies Stocked

Dyes and Chemicals—Continued

eral, London, made public by the Department of Commerce.

An epoch in the British chemical industry was marked by the recent fusion of interests of the most powerful chemical manufacturers in the country under the new title of The Imperial Chemical Industries, Ltd., with a capital of £56,802,996; and the conversations on trade conditions at Romsey, point to a possible lightening of some of the harmful competition, and, in respect of the chemical industry, the abolition of superfluous plant and overproduction.

A development of great importance is that of the manufacture of synthetic ammonia and nitrogenous fertilizers; the synthetic ammonia and nitrates plant at Billingham will, it is said, ultimately have a capacity equivalent to 300,000 long tons per annum—or almost the amount of the present output of by-product sulphate of ammonia in this country.

The market in miscellaneous heavy chemicals was overshadowed during the greater part of 1926 by the coal trouble. At the end of the year caustic soda was in moderate demand at £17:10s. per ton for the 76% product. Bicarbonate of soda was quoted at £10: 10s. per ton, bleaching powder at £8: 10s., chlorate of potash at slightly over 3½d. per lb., carbonate of potash at about £26 per ton, caustic potash at £27 per ton, permanganate of potash at 5d. per lb., for the commercial product, and nearly 7d. per lb. for the B. F. quality, bichromate of potash at 4d. per lb., white lead acetate at £45: 10s. per ton, and nitrate of lead at £40: 10s. per ton. Arsenic, which is comparatively scarce, was quoted at £16 per ton for the white powdered grade. The prices of most coal tar products have increased, owing to the coal strike, and at the end of 1926 were relatively high.

Considerable research continues to be conducted by the comparatively young British fine chemical industry, especially in the direction of the production of medicinal, odorous and photographic chemicals.

The following is an indication of the conditions of the fine chemical market at the end of 1926: Asperin was in request at about 2s. 5d. per lb., and sodium salicylate powder at 1s. 10d. per lb.; saccharin 55s. per lb. is in demand. There was also an excellent demand for thymol at 11s. 9d. per lb., and potassium iodide at 17s. per lb.

In respect of dyestuffs, it is thought in England that the amalgamation thereof with the Imperial Chemical Industries, Ltd., should fortify the dyestuff manufacturers' position very greatly, and hasten the time when Government protection will be no longer needed.

LAWRENCE, MASS. The plant of the Pemberton Co., manufacturers of glazed cotton wadding, will be sold at a voluntary sale by absolute auction on Feb. 11. Henry S. Anthony & Co., Lowell, Mass., are the auctioneers in charge.

Obituary

Warren H. Freeman

Warren H. Freeman, formerly of Arlington, Mass., and for many years representative of the Sawyer Mills, Dover, N. H., died suddenly at his home in Hinsdale, Ill., recently. He was born Nov. 15, 1843. At eighteen years of age he answered the call for volunteers and served three years in the Civil War, being mustered out as sergeant in 1864. He was in many heavy battles, including Gettysburg. For a long period he represented the Sawyer Woolen Mills of Dover, N. H., both about Boston and in Chicago, to which latter city he transferred his headquarters about 1880. His father, who was a printer, published the war letters of Warren Freeman and his older brother Eugene, in a volume entitled "Letters from Two Brothers," which is to be found in some libraries. He is survived by his widow, Flora Dodge Freeman; and four sons, Henry Warren Freeman, a lawyer in Chicago; Courtney Dodge Freeman, Charles Marble Freeman and Philip Freeman, all of Chicago. Philip is of the sixth generation of the name, the first coming from England to Boston, with his wife, previous to 1740.

Arthur L. Strang

Arthur L. Strang, 57 years old, president of the Mechanicville (N. Y.) Knitting Co., died at his home after a week's illness of pneumonia. He succeeded his father, the late Edward Strang, as head of the knitting firm in 1917 and in addition he was vice president of the Manufacturers' National Bank and a prominent member of the Mechanicville Rotary Club. He is survived by his widow, mother, a son and a daughter.

J. C. Jackson

J. C. Jackson, retired silk manufacturer of Fort Plain, N. Y., died last week at his home after a brief illness. He was 61 years old. For a number of years he operated the Jackson Silk Mills serving as president until he disposed of the plant and entire business about a year ago. He was prominently identified with several industrial enterprises at Fort Plain.

Robert A. Gray

Robert A. Gray, superintendent of the Rodman Mfg. Co.'s plant at Shady Lea for more than 30 years, died at his home in Allenton, R. I., recently in his 64th year. He retired from active work several years ago, and has been in failing health for a year. He is survived by a widow, daughter and two grandchildren, of Winsted, Conn.

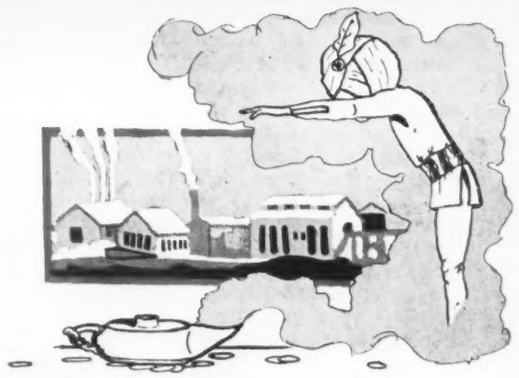
James J. Morgan

James J. Morgan, overseer of the carding department of the Assabet Mills of the American Woolen Co., Maynard, Mass., died at his home in that town on Jan. 11, after a long illness, aged 61 years.

James S. Nelson

James Stewart Nelson, head of the winding department of the North Grafton Thread Mills, died at his home in Providence, R. I., recently, after an illness of several months.

THE GENIE IN TEXTILE MILLS



When Aladdin rubbed his lamp, the Genie appeared to serve him. If he were at your elbow now, you might say, "Genie, my cotton is not white enough. Bleach it for me to a swan's down whiteness." Today the lamp is lost. But cotton, wool or silk can be made snowy white without the Genie.

"Star" Brand silicate of soda gives you the most economical and dependable results from your peroxide. The products are much whiter, colors decidedly more brilliant and fabrics unharmed.

There are other silicate uses: to prevent rust stains from kiers, for boiling off, for printing cotton goods, for weighting rayon and silk. Send for detailed information on any or all of these silicate uses.

PHILADELPHIA QUARTZ CO., 121 S. Third St., Phila, Pa

SODIUM SILICATE

All Around

EFFICIENCY

ECONOMY VICTROLYN REG. U.S. PAT. OFF. SIMPLICITY

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Reasons Why

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is used by the largest cotton mills in the country as a sizing assistant for Cotton Warps.

See also CONSOLIDATED TEXTILE CATALOG

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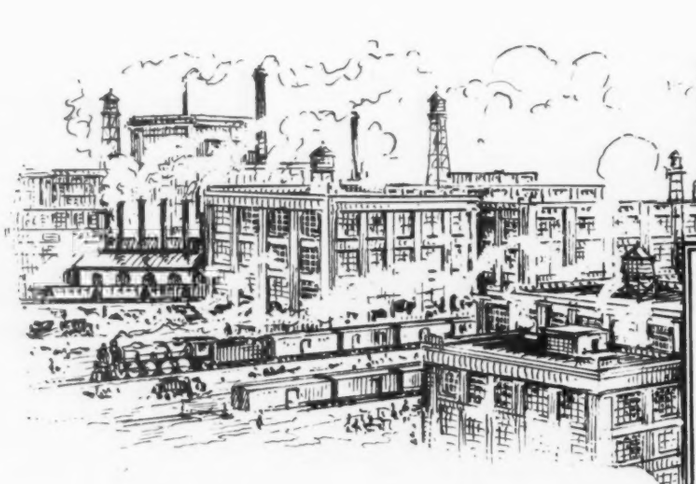

There Is a Place for These Industries in the Solid South

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Furniture Plants
Silk Throwing Plants
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General Gas & Electric Corporation

offers the services of its Industrial Development Division to

MANUFACTURERS WHO ARE LOOKING SOUTH

THE South has much to offer the forward-looking manufacturer, and the manufacturer who is looking Southward can now secure trustworthy information about the markets, manufacturing and power facilities of the Carolina territory served by the interconnected power systems of the General Gas & Electric Corporation.

OUR Industrial Division is equipped to render every aid in the selection of new locations for factories, assembly plants or other industries, and to assist you in looking carefully into the factors of transportation and population; of labor and climate; of health and water; of warehousing, freight rates and banking facilities; of commercial and business conditions and opportunities, and of all other factors which require serious consideration.

THROUGHOUT the Southern territory served by the General Gas & Electric Corporation, industrial and business progress has been steady and uninterrupted. This territory is rich in the production of cotton and cottonseed products, building materials and fertilizers. It is equally rich in manufacturing facilities, and in the unlimited power which serves the industries of this section through large interconnected transmission systems, which secure their power supply from the most modern generating stations.

The services of our Industrial Development Division are offered to manufacturers who are now interested, or may soon be interested, in locating main or branch factories in the territory served by the General Gas & Electric Corporation. The services of this division may be enlisted in the strictest confidence, without charge or obligation.

W. S. BARSTOW & COMPANY

INCORPORATED

Financial and Operating Managers of Public Utilities

50 Pine Street **New York**

Cheney Bros. Have No Thought of Moving

"We are firmly established in Connecticut and have no intention of establishing any branches anywhere and, above all, have no thought of moving," writes President Charles Cheney of Cheney Brothers, South Manchester, Conn., in a letter to President E. Kent Hubbard of the Connecticut Manufacturers' Association.

Mr. Hubbard wrote for a statement in reply to statements made at the New England Conference recently that the company was offered inducements to move elsewhere. "Our roots are deeply imbedded in the soil of Connecticut and we must win or be defeated on this ground." President Cheney added.

Numerous offers to locate elsewhere have been received by Cheney Brothers. They embrace the usual attractive inducements and Mr. Cheney says: "I can safely say that in some cases wage scales which are cited are not much over half what we are now paying."

Census of Textile Machinery Trade

Decrease in Preparatory Machinery—Increase in Knitting Machines—Decrease in Finishing

WASHINGTON, D. C.

THE Department of Commerce announces that, according to data collected at the biennial census of manufactures taken in 1926, the establishments engaged primarily in the manufacture of textile machinery and parts reported a total production, for 1925, of such machinery (including machinery for bleaching, dyeing, printing, mercerizing, finishing, etc.) to the value of $108,078,182, and of other products (including receipts for repair work and contract work) to the value of $13,575,142, making a total of $121,653,324, a decrease of 13.5% as compared with $140,661,358 in 1923, the last preceding census year.

The items entering into the total value of textile machinery as reported for 1925, with their percentages of increase or decrease as compared with 1923, are as follows: Fiber-to-fabric machinery (pickers, carders, rovers, spinners, winders, etc.), $19,879,797, a decrease of 41%; fabric machinery (looms, knitting and braiding machines, etc.), $31,063,595, an increase of 2.2%; machinery for converting and finishing yarn and fabric (bleaching, dyeing, printing, mercerizing, finishing, etc.), $7,800,379, a decrease of 24.1%; other textile machinery (including extra parts, attachments, and accessories), $49,334,411, a decrease of 4.8%.

In addition, textile machinery and parts are manufactured to some extent by establishments engaged primarily in other industries. The value of such machinery and parts thus produced outside the industry proper in 1923 was $1,237,679, an amount equal to approximately 1% of the total value of textile machinery and parts reported for the industry as classified. The corresponding value for 1925 has not yet been calculated but will be shown in the final reports of the present census.

Massachusetts, the leading State in this industry, reported products valued at $51,411,150, or 42.3% of the total; Pennsylvania was second with $23,641,882, or 19.4%; and Rhode Island was third with $17,508,719, or 14.4%. The combined output of textile machinery reported by these three States was valued at $92,561,751, or 76.1% of the industry total.

Of the 379 establishments reporting for 1925, 123 were located in Massachusetts, 59 in Pennsylvania, 52 in New Jersey, 47 in Rhode Island, 21 in New York, 13 in Georgia, 13 in North Carolina, 12 in Connecticut, 8 in New Hampshire, 6 in Illinois, 5 in South Carolina, 3 in Alabama, 3 in Maine, 3 in Vermont, 2 in Delaware, 2 in Iowa, 2 in Maryland, and 1 each in Kentucky, Michigan, Ohio, Tennessee, and Wisconsin. In 1923 the industry was represented by 428 establishments, the decrease to 379 in 1925 being the net result of a loss of 72 establishments and a gain of 23. Of the 72 establishments lost to the industry, 32 reported commodities other than textile machinery and parts as their principal products and were therefore transferred to the appropriate industries, 18 had gone out of business prior to the beginning of 1925, 8 were not engaged in manufacturing in 1925, 4 were idle during the entire year, and 10 reported products valued at less than $5,000. (No data are tabulated at the biennial censuses for establishments with products under $5,000.

The statistics for 1925, as presented herewith, are preliminary and subject to such correction as may be found necessary upon further examination of the returns.

TABLE 1.—TEXTILE MACHINERY AND PARTS—PRODUCTION, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1925 AND 1923

Kind	1925 Number	1925 Value	1923 Number	1923 Value
United States, total value	.....	$121,653,324	.....	$140,661,358
Fiber-to-fabric machinery	.....	19,879,797	.....	33,684,071
Picker machines	2,467	2,221,673	2,950	3,714,926
Carding machines	1,163	1,762,630	3,076	4,345,638
Combing machines	231	507,056	197	528,025
Drawing frames	3,145	388,343	4,894	1,215,643
Roving machines	1,119	1,592,361	2,649	4,670,147
Spinning machines	3,271	3,787,986	6,045	9,492,941
Doubling and twisting frames	1,523	2,418,873	1,570	3,205,381
Winders — skein, spool, bobbin, quill, cone, etc.	.....	5,620,511	.....	5,289,093
Beaming, warping, and slashing machines	.....	1,580,364	.....	1,222,277
Fabric machinery	.....	31,063,595	.....	30,402,137
Looms for weaving, except carpet and rug	28,264	15,173,457	33,530	14,141,305
Looms for weaving, carpet and rug	1,355	542,879	1,259	1,948,787
Knitting machines	30,370	14,344,031	40,693	13,241,732
Spring needle	2,277	5,377,522	3,787	5,452,177
Latch needle	19,933	8,356,820	14,325	5,838,613
Other, including loopers	8,160	609,689	22,581	1,950,942
Braiding machines	3,812	815,587	7,375	988,287
Other fabric machines, including lace and net, embroidery, and cordage and rope	.....	187,641	.....	82,026
Machinery for bleaching, dyeing, printing, mercerizing, finishing, etc., stock, yarn, and cloth	.....	7,800,379	.....	10,276,621
Other textile machinery	.....	7,293,746	.....	10,117,870
Extra parts, attachments, and accessories for textile machinery	.....	42,040,665	.....	41,687,970
Repair work and contract work	.....	7,796,596	.....	9,678,965
All other products	.....	5,778,546	.....	4,813,724

TABLE 2.—TEXTILE MACHINERY AND PARTS—PRODUCTION, BY KIND, NUMBER, AND VALUE, FOR SELECTED STATES: 1925 AND 192[illegible]

[This table presents statistics for all States for which separate figures can be given without disclosing the operations of individual establishments. Certain other States, however, reported larger values of products than some of the States shown separately.]

Kind and State a	1925 Number	1925 Value	1923 Number	1923 Value
United States, total value	.....	$121,653,324	.....	$140,661,358
Massachusetts	.....	51,411,150	.....	69,343,009
Pennsylvania	.....	23,668,882	.....	21,348,469
Rhode Island	.....	17,508,719	.....	18,994,165
New Jersey	.....	7,480,614	.....	6,415,415
New Hampshire	.....	6,934,488	.....	5,588,192
Illinois	.....	3,760,732	.....	3,141,785
Connecticut	.....	1,972,607	.....	1,956,439
New York	.....	1,881,755	.....	2,959,597
North Carolina	.....	1,339,133	.....	1,553,808
Georgia	.....	702,649	.....	668,376
Vermont	.....	675,448	.....	759,257
South Carolina	.....	438,261	.....	677,730
All other States	.....	3,878,886	.....	7,255,116
Fiber-to-fabric machinery, total a	.....	19,879,797	.....	33,684,071
Picker machines, total	2,467	2,221,673	2,950	3,714,926
Massachusetts	2,276	2,034,991	2,871	3,650,165
Carding machines, total	1,163	1,762,630	3,076	4,345,638
Massachusetts	1,124	1,660,584	2,870	4,052,529
Combing machines				
Massachusetts b	231	507,056	197	528,025
Drawing frames, total a	3,145	388,343	4,894	1,215,643
Roving machines, total	1,119	1,592,361	2,649	4,670,147
Massachusetts	503	778,710	.....	a
Spinning machines, total	3,271	3,787,986	6,045	9,492,941
Massachusetts	1,544	2,118,756	3,149	3,748,412
Doubling and twisting frames, total	1,523	2,418,873	1,570	3,205,381
Massachusetts	614	1,275,431	874	1,946,929

TABLE 2.—TEXTILE MACHINERY AND PARTS—PRODUCTION, BY KIND, NUMBER, AND VALUE, FOR SELECTED STATES: 1925 AND 1923 — Continued

Kind and State a	1925 Number	1925 Value	1923 Number	1923 Value
Winders — Skein, spool, bobbin, quill, cone, etc., total	.....	$5,620,511	.....	$5,289,093
Massachusetts	.....	743,736	.....	1,347,931
New Jersey	.....	680,308	.....	a
Pennsylvania	.....	245,369	.....	a
Beaming, warping, and slashing, machines, total	.....	1,580,364	.....	1,222,277
New Jersey	.....	832,107	.....	207,653
Massachusetts	.....	538,941	.....	864,604
Fabric machinery, total a	.....	31,063,595	.....	30,402,137
Looms for weaving, except carpet and rug, total	28,264	15,173,457	33,530	14,141,305
Massachusetts	25,261	13,481,818	30,853	12,870,522
Looms for weaving, carpet and rug, total a	1,355	542,879	1,259	1,948,787
Knitting machines, total	30,370	14,344,031	40,693	13,241,732
Spring needle a	2,277	5,377,522	3,787	5,452,177
Latch needle	19,933	8,356,820	14,325	5,838,613
Pennsylvania	4,736	2,892,675	.....	a
New York	416	277,006	.....	a
Other knitting machines, including loopers a	8,160	609,689	22,581	1,950,942
Braiding machines	3,812	815,587	7,375	988,287
Other fabric machines, including lace and net, embroidery, and cordage and rope a	.....	187,641	.....	82,026
Machinery for bleaching, dyeing, printing, mercerizing, finishing, etc., stock, yarn, and cloth, total	.....	7,800,379	.....	10,276,621
Pennsylvania	.....	2,683,772	.....	4,952,327
Rhode Island	.....	1,971,015	.....	1,849,587
New Jersey	.....	1,503,583	.....	1,049,917
Massachusetts	.....	1,371,400	.....	1,613,260
Other textile machinery, total	.....	7,293,746	.....	10,117,870
Pennsylvania	.....	2,927,911	.....	2,370,893
Massachusetts	.....	2,096,906	.....	5,066,780
Extra parts, attachments, and accessories for textile machinery, total	.....	42,040,665	.....	41,687,970
Massachusetts	.....	17,971,508	.....	18,422,712
Rhode Island	.....	7,259,851	.....	6,643,513
Pennsylvania	.....	6,109,536	.....	5,548,027
New Jersey	.....	3,790,234	.....	3,970,463
New Hampshire	.....	3,012,257	.....	2,354,304
Repair work and contract work	.....	7,796,596	.....	9,678,965
All other products	.....	5,778,546	.....	4,813,724

a State statistics for certain classes of products are omitted to avoid disclosing the operations of individual establishments.

b No combing machines reported for other States.

TABLE 3.—SUMMARY FOR THE INDUSTRY, FOR THE UNITED STATES: 1923 AND 1925

	1925	1923	Per cent of increase + or decrease —
Number of establishments	379	428	—11.4
Wage earners (average number) a	27,869	35,672	—21.9
Maximum month	Dec. 28,456	July 36,666	.....
Minimum month	Aug. 27,428	Jan. 33,694	.....
Per cent of maximum	96.4	91.9	.....
Wages b	$37,463,681	$46,022,545	—18.6
Cost of materials (including fuel, electric power, and mill supplies) b	$39,036,868	$49,705,554	—21.5
Value of products b	$121,653,324	$140,661,358	—13.5
Value added by manufacture c	$82,616,456	$90,955,804	—9.2
Horsepower	61,738	56,295	+9.7

c Not including salaried employes.

b The amount of manufacturers' profits can not be calculated from the census figures, for the reason that no data are collected in regard to a number of items of expense, such as interest, rent, depreciation, taxes, insurance, and advertising.

c Value of products less cost of materials.

Financial Report

(*Continued from page 473*)

sheet for the last two years compares as follows:

ASSETS	1926	1925
Invent.	$15,760,072	$18,931,934
Cash & accts rec.	†15,315,506	12,933,415
Sundry sec.	61,650	302,750
Unearned ins. prem.	482,601	.....
Plant	*46,610,373	45,919,747
Total	78,230,202	78,087,845
LIABILITIES		
Cap stock	39,612,300	40,000,000
Notes & accts. payable	‡449,707	17,845,910
Five-year 5½ nts.	17,500,000	.....
Accrued int.	401,041	.....
Res for deprec.	16,765,733	15,395,545
Disct & doubtful debts	200,000	.....
Surplus	3,301,421	4,846,390
Total	78,230,202	78,087,845

* Book value as of Dec. 31, 1925, plus additions at cost.

† Includes $3,777,073 cash, $2,500,000 United States certificates of indebtedness and accounts receivable $9,038,433.

‡ Notes payable, none for 1926.

Note.—As of Dec. 31, 1926, the company had contracted to purchase materials and supplies totaling $4,223,332, which was $100,905 below the then market.

Treasurer Edwin Farnham Greene reports in part as follows:

"Outcome of year's operations is disappointing, but much progress has been made which is not reflected in earnings statements. Accounts as usual have been made up on a conservative basis, each item of the in-